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ABSTRACT

The "Idea Place," a regular feature carried by the magazine "Learning," provides an assortment of practical teaching techniques selected from commercially available materials and from ideas submitted by readers. Games and activities are given for the areas of reading, writing, spelling, mathematics, science, social studies, and arts and crafts. Topics treated by this compilation are: (1) drawing; (2) testing students; (3) letter writing to celebrities; (4) using telephone directories as teaching tools; and (5) creating a board game based on a novel. (JH)

IDEA PLACE: MIDDLE GRADES

[COMPILED FROM SEVEN ISSUES OF LEARNING MAGAZINE, SEPTEMBER TO NOVEMBER 1982 AND JANUARY TO APRIL-MAY 1983]

Compiled by
The ERIC Clearinghouse on Teacher Education
Washington, DC

Idea Place

Middle and upper grade teachers should not overlook the many easy-to-adapt activities described in the Early Grades section of Idea Place.

Language Arts

PAIRED INTERVIEWS

The ability to ask good questions is an important and often overlooked skill. A stimulating beginning-of-the-year activity that gives children practice at probing is the paired interview. Students conduct interviews in twos, with the goal of presenting their partners to the rest of the class.

As a warm-up exercise, go around the class and ask each student to think of a question that cannot be answered with a simple yes or no. Suggest that children focus on questions beginning with *who*, *what*, *when*, *where* or *why*. Discuss how asking open-ended questions draws out the most informative responses.

Now pair the students. (If possible, avoid putting together two very quiet children or two children who know each other well.) Give students 10 minutes to interview each other and to prepare brief statements about their partners. At the end of the allotted time, call the class into a circle. Each student introduces his partner and relates one or two facts of particular interest about her. You may wish to have students write brief biographical sketches about their interviewees for a bulletin board display.

Idea by: Roberta Gordon, Lincoln, Mass.

GABBLED COMMUNICATION

You don't always need intelligible language to communicate. Vocal tones, facial expressions and gestures can often be used to put across meaning as effectively as words. To demonstrate this point and to encourage students to explore means of communication other than language, try this dramatics activity from *Move!* (Plays, Inc.), which calls on students to act out scenes using sounds and movements but not actual words.

To help students get the idea, ask if anyone in the class has ever watched a foreign film. Were students able to follow much of what was going on merely by focusing on the actors' motions and their verbal *sounds*? Demonstrate speaking in gabble or gibberish by imitating the characteristic sounds of particular languages—the soft, rolling vowel sounds of Italian, for example, or the deep, gutteral intonations of German.

Now break the class into groups of four or five and give each group a different scene to act out in gabble. Some possibilities:

—A car dealer is trying to sell a small sports car to a large family.

—A group of tourists is shown an old castle by a loquacious guide.

—Sailors aboard a sinking ship discover there is only one lifeboat.

—A politician campaigning in a park draws a small crowd of people who respond to the speech.

Allow a short time for students to discuss the action of their scenes and to practice gabbling. Give each group several minutes to perform and then invite the audience to guess the plot.

WRITE YOURSELF A LETTER

Opportunities for students to assess their own writing progress can be most valuable. A little advance planning is needed to provide such opportunities, however.

During the first week of school, have students write letters to themselves. First lead a brainstorming session during which the class comes up with topics to write about: relationships with family, friends, neighbors; hobbies or special interests; trips taken. Encourage students to write about specific events, observations or feelings so that at the end of the year, when individuals read their own letters, they'll be able to see just how much their thoughts—and their ability to express them—have matured.

After students have written their letters, provide each with an envelope in which to seal the missive. Then put the letters away until the last week of school. The activity may lead into a discussion about journal writing as an effective means of self-discovery.

Idea by: Lois J. Yocum, Marshalltown, Iowa.

CHORUS-LINE SPELLING

Stretch attention spans during spelling review by getting your class actively involved. Identify physical characteristics that several of your students have in common—for example, wearing sneakers, having black hair, wearing a belt and so on. Call out the characteristics one by one and ask all the students "fitting the description" to stand up and spell one of the review words: "Wearing purple, spell *dismay*." All students wearing purple should stand up and, at a signal from you, respond in chorus, "*D-i-s-m-a-y*." Continue in this way through the spelling list. Use a similar method for other kinds of review as well.

Idea by: Joyce McShara, Putnam Valley, N.Y.

SKILL AUTOBIOGRAPHIES

Writing projects usually generate the most enthusiasm when students have a personal stake in the essay topic. Skill autobiographies ask students to think about past endeavors and to imagine how those experiences might be useful in future occupations.

Have each student make a list of six or seven skills, abilities or talents the student has developed during his lifetime. The student then chooses one skill about which he feels particularly proud, and expands upon it in a report that describes when and how the skill was acquired or discovered, specific experiences in which the skill was used, and why the skill is important to the student.

When the essays are completed, students do research to determine at least three professions in which their skill could be used. A student who has athletic talents, for example, could be a professional athlete, a sports coach or a physical education instructor. A child with a flair for drawing might consider being an artist, a commercial illustrator or a designer. You may want to group students

Art by Allen Say

according to general skill areas to collaborate on possible career choices.
Idea by: Kate Algozzine, Gainesville, Fla.

Mathematics

IN-BETWEEN FRACTIONS

A piece of paper and a pencil are all that's needed for this game for two or three players (from *Math Plus*, Education Plus).

The first player writes down two fractions with values less than 1—for example, ½ and ¼. The next player writes down any fraction that is between the first two in value, such as ⅜. Each player thereafter writes down a fraction whose value is between the last number recorded and one of the original two numbers. The third player, for instance, could write 7/16, which is between ⅜ and ½.

Play continues until each player has had ten turns. Each correct answer earns a player ½ point. If one player challenges an answer written by another player, she earns ½ point if the answer is in fact wrong; if the answer is correct, however, the challenger must deduct ¼ point from her score. The player with the most points at the end of the ten turns is the winner.

PLACE VALUE WITH DECIMALS

Once students have mastered place value with whole numbers, they're ready to move on to place value with decimals—a somewhat trickier business. *Focus on Decimals 1* (Activity Resources) suggests the following matching activity to give students practice in recognizing and expressing decimals.

On the right half of a ditto master, make a place value chart like the one in the illustration. Fill in the squares with various numbers and write out the numbers in random order on the left. Have students match the spelled-out numerals with the corresponding numbers on the chart.

TRIPLE WHAMMY

Tic-tac-toe appeal enlivens this two-person math game that reviews basic facts (from *Mathematics Games for Classroom Use*, Silver Burdett).

Divide a sheet of heavy-weight paper into nine equal sections, and mark off each section into a 16-square grid. Then laminate the paper for use with wipe-off markers.

On each grid, write a mathematical symbol in the upper left square and a number in each square across the top and down the left-hand side. The example is set up to review the basic multiplication facts up to 9 x 9, but gameboards also may be filled in to review addition, subtraction and division of whole numbers or fractions.

One player selects the grid to be used in the first round of play. Players take turns picking two numbers, performing the indicated mathematical operation with them, and writing the result in the square where the two numbers would intersect. If a player writes in an incorrect answer, the opponent may correct it, claim that square, and proceed to fill in another square. Play continues until one player wins the grid by correctly filling in a series of three squares, tic-tac-toe style. If no one wins three squares in a row, the grid is claimed by the player who fills in the most squares. To claim the grid, the player marks the mathematical symbol square lightly with her colored marker.

X	3	5	7	X	2	7	9	X	8	5	9
4				3				3			
3				6				4			
6				2				2			
X	4	8	6	X	9	5	8	X	6	7	4
6				9				8			
8				5				4			
7				8				9			
X	2	1	7	X	2	5	6	X	4	6	7
5				9				7			
9				1				2			
7				8				3			

The player who loses the first grid chooses the second grid for play and takes the first turn filling in a square. The rounds continue in this manner until one of the players wins three grids in a row—the triple whammy—or claims the greatest number of grids.

Potpourri

STATION BREAK

To take the monotony out of the day-to-day classroom routine and at the same time provide truly individualized activities for students of varying abilities, try introducing the "station break." Used once or twice a week, it can supply academic as well as psychological refreshment.

Post in two or three locations copies of a sheet of paper on which you've written each student's name along with an activity geared to her or his particular needs at the time. Activities might include creative writing assignments, work with flash cards, listening-center tasks, skill-reinforcing games, etc. You may want to pair or group students for some activities, ei-

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	thousands	hundreds	tens	ones		tenths	hundredths	thousandths
eight and three tenths				9	.			
six tenths			8	3	.	4		
four and three hundredths				0	.	9	6	2
six thousand two hundred six				8	.	3		
forty-three	6	2	0	6	.			
nine hundred sixty-two thousandths				4	.	0	3	
eighty-three and four tenths				0	.	6		
nine			4	3	.			

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ther because several students need extra help in the same curriculum area or because they can help one another.

Place the necessary materials—gameboards, paper and pencils, flash cards, listening-center worksheets—near the activity lists. Then, at an unscheduled time of your choosing, announce, "Station break."

Students check the list, pick up their materials, and set to work on their assigned activities. You, meanwhile, can be providing assistance as needed. When tasks have been completed, check students' work and note which children need further help in a particular area.

Idea by: Patricia Krivosh-Cheza, Masury, Ohio.

FAMILIAR FACES

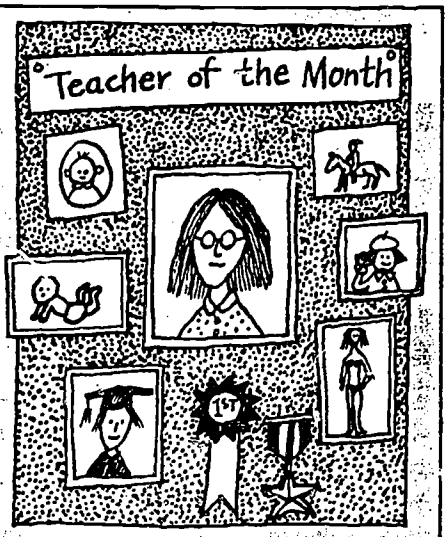
Teachers expend a good deal of effort getting to know the children at school, but little effort goes into helping students get to know school staff members. These two projects can remedy the situation and give students a better idea of the personalities within the professionals.

• **Staff Calendar.** To help your class learn to recognize school personnel, take a snapshot of every staff member—teachers, cooks, administrators, secretaries, custodians, nurses—and mount each picture on a card with the person's name and job title. Arrange these cards alphabetically on a large wall calendar, one snapshot per school day. Each day, discuss with your class the featured staff person, pointing out what he or she does and where on the school grounds the person can be found. Within a month or so, students should know the names, jobs and locations of every member of the staff. (If your staff is very large, you might consider introducing two people on the same day.)

Idea by: Peg Dunlap, Cedar Rapids, Iowa.

• **Teacher Feature.** Students often have a hard time viewing teachers as human beings who have lives outside of school. Help youngsters get to know you and your colleagues better by establishing a "teacher feature" bulletin board.

Designate a highly visible area as the permanent display spot—a hallway or the library would be a good choice. Each month, a different staff member becomes the subject of the bulletin board display, which includes whatever materials the person wishes to contribute: a brief autobiography, photographs, awards, newspaper clippings, report cards or other



mementos from school days. Students may be enlisted to help assemble the displays, and may even contribute to them by interviewing the featured faculty person or by writing about an encounter with the staff member of the month.

Idea by: Sister Corrine Dahlheimer, Epiphany School, Coon Rapids, Minn.

TAPING TIPS

Cassette recorders have myriad uses beyond recording music and playing commercially prepared tapes. Here are just a few suggestions:

—Take the tape recorder on a field trip and tape-record highlights from the guide's commentary. Back in class, the children can listen to the tape to refresh their memories before writing about the trip.

—Tape-record instructions for a substitute teacher. Include on the tape a message that introduces the substitute to your students and expresses your expectations for the day.

—Record weekly spelling lists. At review time, children can listen to the tape and take a practice test.

—Tape-record a variety of specific sounds, such as those made by a siren, a motorcycle, a garbage disposal. Have children listen to the tape and try to identify the sounds.

—Set up a "tape pal" exchange. Have class members prepare presentations to read and record, such as a recap of a school assembly or a description of activities for National Book Week. Swap tapes with a class from another school for a lively year-long correspondence.

—Record half a story and have children supply the ending.

—Tape yourself reading to the class. If you read daily, you will soon have a complete book on tape. Stock

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books-on-tape in a listening center, where children can go to rehear favorite tales.

—Tape-record the evening weather report for a month. Use the tapes to provide data for a temperature or rainfall chart.

—Play the "eye witness" game. Cut out pictures of people from magazines and give one picture to each child. Have children write brief physical descriptions of their subjects to record on tape. Display the pictures for the class, play the tape, and have students try to match each description with the correct picture.

Idea by: Doris Cruze, Charles Hay School, Englewood, Colo.

FUN AND EGG-CITEMENT

Egg cartons can be the basis of dozens of projects and can be reincarnated as anything from caterpillar toys to jewelry boxes. This time, though, involve children in the creative thinking process by challenging them to invent games using one or more egg cartons as their basic material. Remind students to consider what kind of game they're creating (math, language, just for fun, etc.), what penalties, if any, there will be, how many people can play at one time, the age level the game is appropriate for, what other materials are necessary, and so on. Thus prepared, students assemble their creations and write out their rules and directions.

After exchanging games so that classmates can critique them and help with debugging, students select names and prices, design packaging and write ads for their products.

Idea by: Patricia Harris, Fairborn, Ohio. ■

Idea Place presents an assortment of practical teaching techniques selected from two kinds of sources: commercially available materials and short ideas submitted by readers. Our purpose in printing ideas from commercial sources is not necessarily to recommend specific products, but to make available excellent activities that might otherwise not come to the attention of our readers.

Learning magazine will pay $25 for original teaching ideas selected for publication in Swap Shop and $10 for original teaching ideas selected for use in Idea Place. Suggestions will not be returned; so you may wish to keep a copy of your idea for future use. Limit your item to 600 words and submit it, along with a self-addressed stamped response envelope, to: Swap Shop, *Learning*, 530 University Ave., Palo Alto, CA 94301.

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But I Can't Draw!

BY WENDY K. CRUIKSHANK

I can't draw. One of my worst fears when I started teaching was having to teach art. It wasn't crafts projects or working with different materials that scared me; it was the simple act of drawing. When students asked me to help them with their pictures, I was never even tempted to try. I would merely tell them to do their best, although I sometimes wondered how helpful that statement was in teaching them anything.

Then one year a specialist from the department of education came to speak about elementary art. His contention was that although it's important to encourage a child's imagination, there is nothing wrong with asking a child to draw realistically. The problem, he said, is that we often ask students to "draw something from memory" when they don't have the object firmly focused in their mind's eye, despite how common the object might be. There are few children, and probably few adults, who are capable of drawing things as they actually are without taking a good hard look at them.

Using the art specialist's advice, I began to encourage my students to look in picture books or encyclopedias for pictures of what they wanted to draw. If, for example, they wanted to draw a giraffe, I'd suggest they check in a book to see how long the animal's neck is compared to its legs. If they chose to draw their family pet, I'd tell them to pick out a picture of a dog closely resembling their own.

Drawing Is Seeing

An artist friend once told me that anyone could draw; it was just a matter of seeing. Slowly I have come to realize the truth of that statement, and to apply it to my classroom teaching.

There are two art projects I use that strongly encourage students to take the time to see. Both provide the best kind of positive reinforcement—not praise from me, but a true sense of accomplishment when students realize that their pictures actually look like the objects they are intended to represent.

The first project is to have each student draw a picture of his or her shoe. The students put their shoes on their desks and study them, keeping them visible all the while they draw. I always encourage the children to take as much time as they need and to be as careful as possible. As they draw, I might point out specific features that have been done well, in addition to things that need more work. Often a little redrawing is all that's necessary to make the picture match the object.

The second project is a bit more complicated, but it has the added benefit of integrating art with math—specifically, with measurement, multiplication and division. It calls for reproducing and enlarging a picture by "squaring."

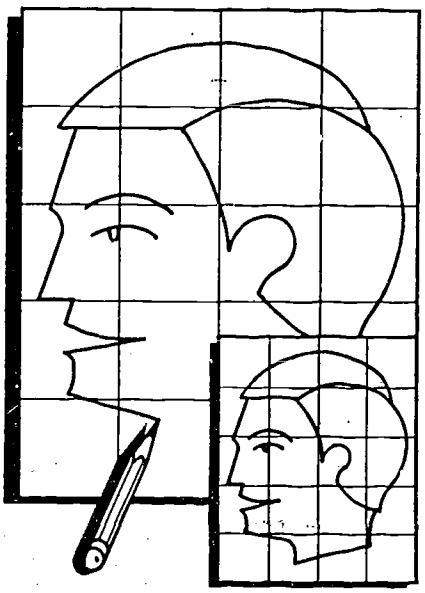
I usually begin by giving each child an appealing but simply drawn picture (comic-strip type, perhaps), or I let them choose their own. In either case, and particularly with younger children, it's best to start with pictures that are all the same size, because multiplying and dividing can get a bit hectic with different-size pictures.

The first step is to block the picture into equal-size squares. A 4-by-5-inch picture, for example, could be divided into 20 1-inch squares, with 4 across and 5 down.

The next step is to draw an enlarged pattern of squares onto a blank sheet of paper. In order to maintain the same proportion, the enlarged squares must be exact multiples of the original squares on the picture. Therefore, a 4-by-5-inch picture that was to be doubled in size would require a sheet of 8-by-10-inch blank paper. On this sheet, the child draws an enlarged pattern of 20 2-inch squares—with 4 across and 5 down.

The third step is to draw an enlarged version of the 4-by-5 picture, by working square by square on the 8-by-10 sheet. Explain to the students that they are to disregard the picture as a whole and focus instead on only one square at a time, looking at a square on the original picture and then drawing an enlarged version of what they see on the corresponding larger square. The process requires another math skill: finding the coordinates. (If this presents a problem for younger students, you might suggest that they number each pattern of squares on each sheet from 1 to 20.)

The completed picture should look something like this:



This project really helps students to see what they are drawing by making them focus on one part at a time. It provides a valuable lesson in looking at the parts of the whole rather than always at the whole. It is also a good project for the nonartistic teacher to implement.

An extension of this project is to give the students pictures of children engaged in various sports activities, and to have them enlarge the pictures—by squaring from one size to the next—until the pictures are life-size. (It's important to enlarge in stages, rather than to jump from very small to very large, because the sense of proportion is easier to maintain.) When the life-size drawings are complete, I have the children paint them and hang them in the gym.

I used to think that teachers could teach math and reading, but that drawing was an innate talent that could never be taught. I have since changed my mind. Teachers may not be able to teach children to draw, but they *can* teach them to see. And in learning to see, anyone can learn to draw. ■

Wendy K. Cruikshank is a substitute teacher in Calgary, Canada.

Art by Sandra Popovich

Idea Place

Middle and upper grade teachers should not overlook the many easy-to-adapt activities described in the Early Grades section of Idea Place.

Language Arts

SHORT TAKES

Old television program listings can be useful tools for teaching students how to write short summaries. Have students study several viewing guides, noting the succinct style used in describing movies and programs. After a class discussion of several examples of the mini-plot summaries, show a short film or ask students to read a short story. Then ask your students to write, in viewing-guide style, about what they've seen or read. The exercise will help students to recognize the most important story elements as well as to write concisely.
Idea by: Cecil W. Morris, Roseville, Calif.

THANKS FOR CALLING

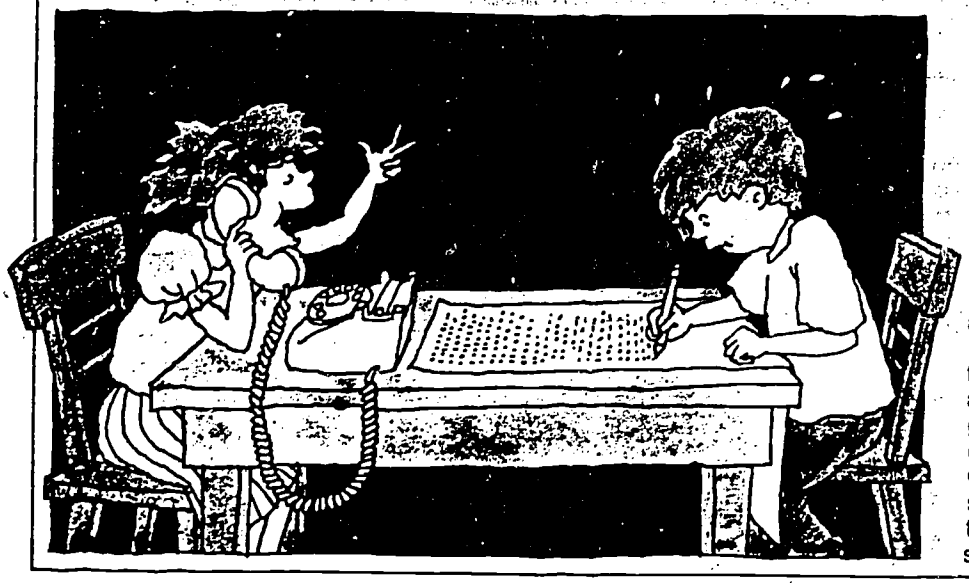
Taking and relaying phone messages often confuse young listeners. This activity from *Clear and Lively Writing: Language Games and Activities for Everyone* (Walker & Co.) can help youngsters to sort, write down and remember the information that is frequently transmitted during a phone call.

Pair students and have them decide who will begin as the message-giver and who will be the message-taker. Discuss with them the kinds of information message-takers should anticipate: who the call is for, who is calling, the purpose of the call (the message). Have the children make up forms on which they can record this information, or bring in standard telephone message pads for them to use. Then ask students to make up several short messages to deliver (you may want to provide a few examples). Have them take turns giving and receiving the messages.

Message-givers should be as clear as possible, and message-takers should repeat what they think the message-giver said (or ask for more information if something important, such as the caller's name, has been overlooked) before filling in the message form.

PERSONALIZED LICENSE PLATES

Students practice telling others something special about themselves in a few words when they make personalized construction-paper license plates. Have each student choose from one to three revealing words related to personal characteristics, a hobby, a nickname or some other important facet of his life. The number of words will depend on the maximum number of letters that will fit on the piece of construction paper. After students have completed their license plates, you may want to have a match-the-plate-with-its-owner contest before putting the license plates out for display. Students may eventually hang their plates on their desks.
Idea by: Val Helmer, Lincoln-Erdman School, Sheboygan, Wis.



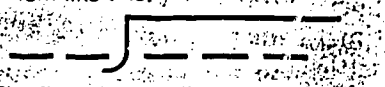
Art by Allen Say

Mathematics

ROLL-A-PROBLEM

The laws of chance dictate the problems in this division diversion from *Real Math* (level 6, teacher's guide, Open Court). Two or more can play and will need a 0-through-5 cube or cards with those numbers.

Have the students outline a division problem like this:



The first player rolls the cube or draws a card, and writes that number in any of the five blanks. He or she continues until all five blanks are filled. (Zero may not be written in the first blank of the divisor, except when it comes on the last roll). The player then divides the three-digit number by the two-digit number. Players take turns until everyone has solved a problem. The player with the greatest quotient wins.

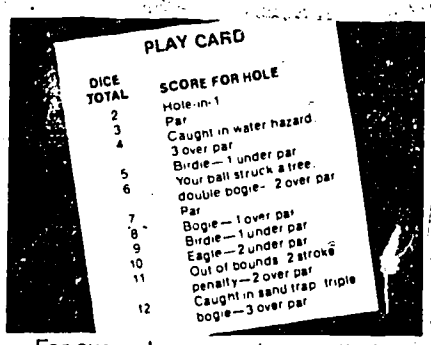
Variations include having the player with the smallest quotient win (0 may not be written in the first blank of the dividend, except when it comes on the last roll). Players may also change the number of digits in the divisor or the dividend, or students may use a 5-through-10 cube (roll again if a 10 is rolled).

BRINGING SKILLS UP TO PAR

Two dice and a scorecard are needed for each student who plays this adding and subtracting game from *Sports* (Activity Resources).

To start, have each student fill in his or her name on a scorecard (cards can be obtained from a local golf course or you can make your own by numbering 3-by-5 cards 1 through 18 on the left, and assigning each "hole" a reasonable number of strokes—usually from 3 to 6—for its "par" on the right). Players each throw a die, and the person with the lowest score goes first. Have this player throw both dice again and then refer to the Play Card. The student computes his or her score by first checking the Play Card to discover what the dice total represents. Then the player uses the par

listed for the hole (or turn) on the scorecard to determine the number of strokes "played" for the hole. The number derived from the calculation should be entered on the scorecard.



For example, say a player rolled a total of 8 on her first turn, and the first hole's par (as designated by the scorecard you prepared) was 4. The player reads the Play Card, determines the appropriate score for her dice total, and marks the first hole of her scorecard with a 5 (1 over par).

Players take turns until everyone completes all 18 holes. Scores are then totaled, with the lowest score winning. In case of a tie, hold a "sudden death" playoff.

ROLL, CIRCLE, MULTIPLY AND ADD

In playing this math game from *How To Develop Problem Solving Using a Calculator* (National Council of Teachers of Mathematics), a group of up to six students working as a team use a die and a calculator to get the highest total score they can.

Before the game begins, supply the group with the numbers 6,450, 1,550, 12,300, 2,350, 7,250 and 10,100 on paper or on the chalkboard. The first child rolls the die, converting the resulting number into hundredths. The same player then circles one of the numbers on the chart. With both numbers determined, the student uses a calculator to multiply the circled number by the percentage represented on the die, and then adds that figure to the circled number.

For example, if 4 is rolled and 2,350 is circled, the player would multiply 2,350 by .04 and then add the result to 2,350. The next child takes a turn rolling the die, choosing a number (once a number is used, it can't be chosen again) and doing the calculations. When all six numbers have been used, the scores are added together. If the total is less than 42,000, students should discuss the following questions to help them figure out how to get a higher score the next time:

If you roll a 5 or a 6 early in the game, which numbers should you circle? Why?

If you roll a 1 or a 2 early in the game, which numbers should you circle? Why?

If two people play this game, taking turns and competing for the highest total, how will the game strategy be different?

What is the largest possible score after six turns? What is the smallest?

Social Studies

WHAT KIND OF PLACE IS THIS?

Your class may not live in the biggest or the "best" town in the world, but there are bound to be some things about the place that make it special. Have your students research what makes their town unique with this fact- and opinion-gathering activity from *The Book of Where* (Little, Brown).

Help the class to decide on the kind of information it wants to collect about its town or city. Some students may want to gather facts—the population, elevation, major historical sites. Others may want to know opinions—what the elderly like and don't like about the spot, if most people think it's noisy or quiet, clean or dirty. Help students to think of ways to gather the information: asking librarians, looking up facts in particular books, making up a questionnaire to use for interviewing neighbors or parents. Finally, have students track down the answers to their questions and compile them in a book. Students will be able to analyze what they learn and make informed judgments about what's "best" and "worst" in their town.

USING THE NEWS

These two activities from *Being Real* (Fearon-Pitman) can foster interest in current events and recognition of the newspaper as an important learning tool.

- **Inquiring Editor.** Patterned after broadcast current affairs programs, this activity asks students first to study newspapers to learn details about local and national happenings. Then you, or a student, acts as a commentator and questioner, asking pertinent questions of two three-member teams. Questions may ask for facts or observations and opinions. Every class member should have the opportunity to be on a team.
- **News Teams.** In this activity, teams of three or four students each prepare reports about news items they find especially significant or newsworthy. The reports, written for children in a lower grade, should be as clear as possible and include a discussion of

the story's background and importance. Maps, charts and other information aids can be used. When the reports are ready, arrange for your reporters to present their efforts to a group of younger children, perhaps a first, second or third grade class. These children should be able to understand your students' reports easily.

WHAT'S IN A NAME?

The Story of American English (Harcourt Brace Jovanovich) suggests a research activity to enrich students' knowledge of where they live. Have the class brainstorm some names of places in your state—towns, rivers, lakes, bridges, mountains and so forth. Suggest that students begin their research into the origins and significance of the names by delving into state history for clues. With help from an encyclopedia and a selection of library books, students can discover which Indian tribes, groups of immigrants or pioneers settled in your part of the country, and how place

Idea Place

names reflect their presence. Important individuals—founders, politicians and others who were significant to your area or to the nation—may also be remembered in the names of natural or man-made features. Have students form teams to investigate several of the names, and have them report their findings to the class.

Potpourri

KEEPING IN TOUCH

A teacher-written newsletter accompanied by a student-written letter can be an excellent means of keeping parents up-to-date on classroom happenings. Each Friday, prepare a summary of the important activities that took place during the week. Then ask each student to write a letter to his or her parents describing the kind of work the student did, his or her reactions to the work accomplished, and anything else the child believes relevant. Have students leave a space at the bottom of their letters for their parents to sign before the letters are returned to you. Encourage parents to write comments or ask questions about their child's letter so that the communication process becomes a two-way street. Send the letters home a second time with your responses, or simply so that parents may keep the letters if they wish.

Idea by: Donna L. Sertic, Rialto, Calif.

Idea Place presents an assortment of practical teaching techniques selected from two kinds of sources: commercially available materials and short ideas submitted by readers. Our purpose in printing ideas from commercial sources is not necessarily to recommend specific products but to make available excellent activities that might otherwise not come to the attention of our readers.

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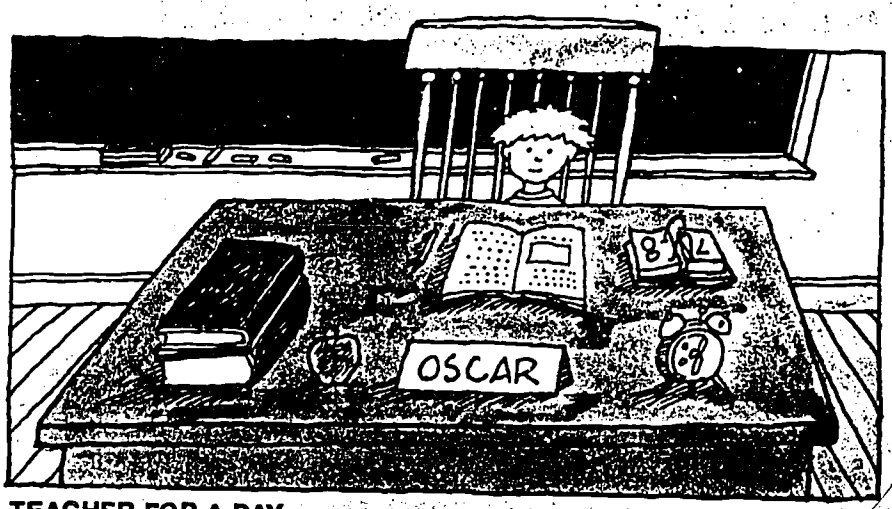


TEACHER FOR A DAY

"If I were the teacher, . . ." Give students the chance to complete that sentence—with actions as well as words—by letting every child be the teacher for one day.

Once a week, or whenever it's suitable, have a student take on your teaching responsibilities for the day. The day before each "takeover," develop a schedule and lesson plans with the teacher-to-be, and give him or her any necessary teacher's editions and materials, such as dittos. Encourage the students to hold review lessons and such activities as oral reading.

To help the student really feel like the teacher, sit in the back of the room and let him or her sit at your desk. Also make a nameplate to show the student's name.

Besides teaching the lessons, your stand-ins should grade tests, organize and lead the lunch line, and perform the other tasks that are part of your daily routine. (Arrange, if you can, to have the student-teachers eat with you in the faculty room on their special days.) In short, do everything possible to have the student fill the role of teacher. When the day is over, you may want to discuss how the experience was similar to or different from what the student had expected.

Idea by: Sondra Scheinberg, Winthrop Avenue School, Bellmore, N.Y.

TAKING THE "OOPS" OUT OF SLIDE SHOWS

A lot of slide show time is spent turning upside-down slides right side up, rearranging the order of the slides or explaining what should be on the screen but isn't. A bit of advance organizing can make future shows less aggravating and more worthwhile. To keep slides in orderly, easy-to-use groupings, you'll need several long narrow boxes, such as envelope boxes; one or two shoe boxes; two colors of marking pens; and index or other small cards. Envelope boxes may need to be reinforced with masking tape if they are flimsy.

Cut the envelope boxes so that they are about 1¾ inches high, or tall enough to hold slides standing on edge. Cut down the shoe boxes to about 2½ inches. Then sort through your slides and group them according to how you want to present them. Code the top border of each slide for easy identification; for example, JSP80 could stand for Jefferson School Picnic 1980.

Now put the slides in order and number them. Also mark the top edges with one color marking pen and the left-hand edges with the other color to ensure that the slides don't go into the projector upside-down and/or backward. Place each group of slides in an envelope box and include a small card on which you briefly describe the slides in the collection. Label the outside of the envelope boxes and organize them by year, subject, alphabetical order or any other scheme that makes sense to you. Place as many envelope boxes as will comfortably fit into a shoe box, and label the front of each shoe box with the subjects of the slides inside.

Idea by: Nicki Klein Parsons, Montrose, Colo. ■

Continued page 126

How To Give a Test That Gets Kids To Learn

BY M. MARK WASICSKO AND STEVEN M. ROSS

Recently, one of the authors of this article, a teacher, gave a difficult test to his students. The next day, he graded the tests, returned them and asked for questions. There were none, despite the fact that many test questions were missed. The following day, he surprised his students by giving them the same test again and offering them the higher of the two grades. Astonishingly, only two students did better the second time, and two did worse.

As he had done before, the teacher passed back the tests and asked for questions. A few were put forth unenthusiastically. The next day, he gave the test a third time. This time the improvement rate went up to three students. At that rate, the teacher calculated, it would take 22 days of retesting to get improvement from the entire class.

What does this incident say about students' attitudes toward tests? Most students, it appears, take a test, wait until the teacher "gives" a grade on it, and then proceed to forget it.

This is an unfortunate situation, but it is one for which students alone are not to blame. They have merely accepted the popular notion of tests as evaluation devices, the means of giving students a grade, and nothing more. But tests can and should do more, including teach students the material they need to know. Here, then, are a few suggestions for giving "tests that teach":

- *Test/retest.* Try the experiment described above. It should encourage students to ask more questions about tests and to look up answers to missed test questions. Another way to provide incentive for seeking correct answers: include on new tests the questions from previous tests, particularly those that were most troublesome to students.
- *In-class test/take-home test.* Following an in-class test, give the students the same test to complete at home. Let the grade be the average of the two test scores. You should expect a near-perfect score on the take-home test, but that is completely in line with the goals of tests that teach.
- *Individual test/group review.* The day after you give a test, organize the class into groups of students of varying abilities. Ask the groups to review the test, discuss the questions and decide on the correct answers. Then have the students *individually* retake the test. If the group average on the retest exceeds a predetermined score—say, 90 percent—every member of the group earns bonus points.
- *Student-written test questions.* One of the best ways to get students to learn material is to have them write their own test questions on it. Ask each student to make a list of true-false or multiple-choice questions based on the material you wish to test. Collect the lists, select the best questions (modify them if necessary), and include them on the class test. Students will feel proud to see their questions selected, and they'll usually get them right too. For essay questions, have the students work in groups, assign one unit or lesson to each group, and ask each group to write one essay question that covers the major points in the unit. Then collect the questions, modify them as necessary, and pass them out to the class as study guides. Tell the students you're going to choose two of the questions for an essay test. What's to be gained from this approach? Students will know what will be on the test and thus will be less anxious about it. But they will still have to prepare for it, because only you will know which questions are going to be asked on the test.

These are just a few ideas for using a much-overlooked but highly valuable teaching and learning tool. Implement the suggestions, and you may find that tests keep on teaching." ■

M. Mark Wasicsko is associate professor in the School of Education at Texas Wesleyan College in Fort Worth, Tex. Steven M. Ross is assistant professor of education at Memphis State University in Memphis, Tenn.

Idea Place

Middle and upper grade teachers should not overlook the many easy-to-adapt activities described in the Early Grades section of Idea Place.

Language Arts

WRITE TO THE SPOT

Send your kids on a wild goose chase? No, let them send one another. They'll learn a valuable writing skill—specifically, how to write exactly what they mean.

To start, divide the class into two groups. Distribute colored construction paper—one color for each group—and have each child design a signed, personalized cutout. Tell the children they are to return to school the next day with a hiding place (on school property, but not in the classroom) in mind. Each child will then write out directions—no maps allowed—to guide a classmate to the selected hiding place. The directions may be elaborate and roundabout, but they must lead to the hidden cutout within a reasonable amount of time. (Remind students that the more detours they include, the more detailed and precise their directions will have to be.) You might even let students make test runs to "debug" their directions during recess.

On the morning of the hunt, the cutouts are hidden, one team at a time, and the directions exchanged. Then, one team at a time, students venture out, directions in hand. (You may want to warn other teachers that your class will be wandering about and peeking into odd places.) After a time limit is up, send the second squad of seekers out. When the timer runs out for the second group, determine which team recovered the most cutouts—and congratulate the *other* team. Students whose cutouts were not located may collaborate with the unsuccessful searchers to see where they were led astray.

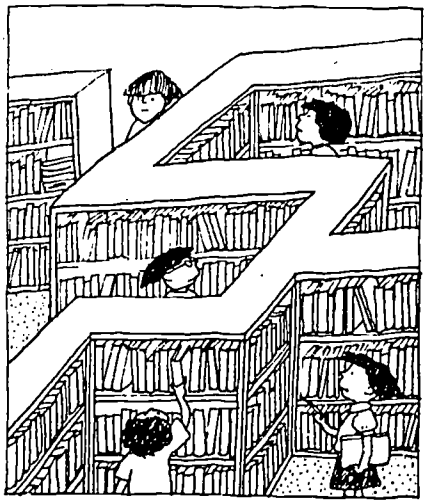
Idea by: Ginny Seabrook, Vail-Deane School, Elizabeth, N.J.

LIBRARY TREASURES

Even though they are out on shelves for everyone to see, the library's treasures may nonetheless remain hidden from students who have not cracked the code of the nonfiction section. Send your class on a treasure hunt that can help youngsters find their way to a lifetime supply of valuable information.

Make several different master lists, each consisting of the call numbers and letters of several nonfiction books. Label the lists Hunt A, Hunt B and so on. Write each catalog code, along with the hunt letter, on a separate index card. Insert each card—except the first from each hunt—in the book preceding it on the hunt list. During library period, give each student an index card with the first clue of a hunt on it.

Each student locates the book indicated on his or her clue card and finds that the jacket pocket of this book contains a card with the next clue on it. Students continue from book to book until they have found all clues, signaled by a "The End" card in the jacket pocket of a find. If one of the books is checked out, consult your master list and tell the student the next clue.



Idea by: Kathleen Glassing, St. Mark's School, Saint Paul, Minn.

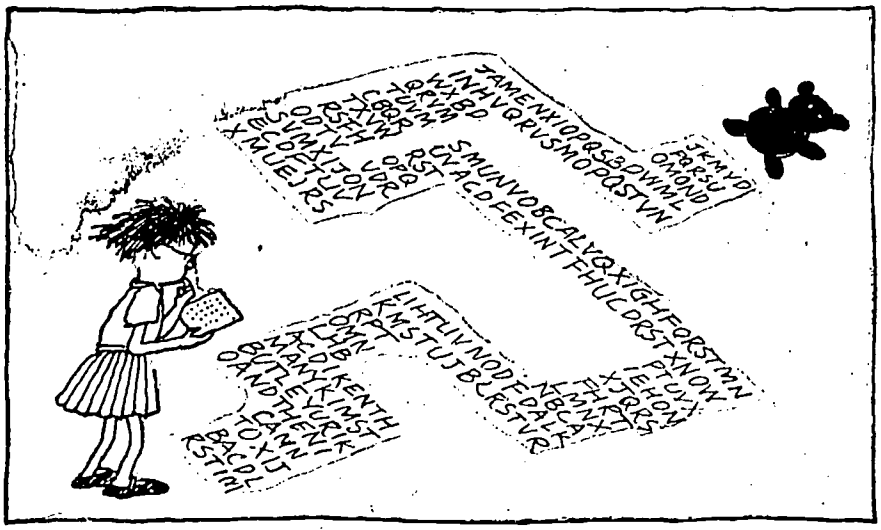
RECIPES FOR FUN

A mix-and-match assignment that starts out with a request for "how-to" essay topics from students may well turn into a riotous writing exercise that gets young imaginations running full tilt.

On a slip of paper, each student writes a "how-to" idea, such as "How To Make a Pizza" or "How To Comb Your Hair." Students then tear their slips in half, between the verb and the direct object. Separate the halves into two boxes and have students draw one slip from each box.

Each student then writes several paragraphs explaining—matter-of-factly or humorously—one of the resulting combinations (e.g., "How To Comb a Pizza" or "How To Make Your Hair"). Final copies can be printed on recipe cards and displayed on a bulletin board titled "Recipes for Fun."

Idea by: Dana Jones, Cut Bank Junior High, Cut Bank, Mont.



Mathematics

FIGURES OF SPEECH

365 =D. in a Y.
12 =E. in a D.
54 =S. on a R.C.

The "equations" above (from *AHA!*, Alfred Eichner) will intrigue students

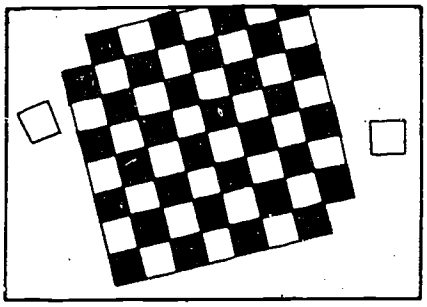
Art by Allen Say

on their first, second and third attempts to solve them. (The answers: days in a year, eggs in a dozen, squares on a Rubik's Cube.)

Invent your own number-related phrases, with each key word represented by its first letter. Write several of the simpler ones on the board to help students get the idea. Then encourage them to make up their own equations for classmates to solve. Keep students' inventions in a notebook where puzzle doers can turn for a mental stretch.

THOUGHT THAT COUNTS

Although some young mathematicians may solve the following thought problems in their heads, many students will want to work them through with pencil and paper or by making models they can manipulate. Supply the questions and solutions separately on problem cards, dittos or the chalkboard (from *The Scientific American Book of Mathematical Puzzles and Diversions*, Simon and Schuster).



• **Chessboard and Dominoes.** Imagine that you have a chessboard and 32 dominoes. "Each domino is of such size that it exactly covers two adjacent squares on the board. The 32 dominoes therefore can cover all 64 of the chessboard squares. But now suppose we cut off two squares at diagonally opposite corners of the board (see illustration) and discard one of the dominoes. Is it possible to place the 31 dominoes on the board so that all the remaining 62 squares are covered?" If so, show how it can be done. If not, explain why it is impossible.

Solution: It cannot be done. Notice that the two diagonally opposite corners are the same color. Therefore, removing them leaves the board with two more squares of one color than of the other. Each domino, however, must cover 2 squares of different colors, since only different colors are adjacent. If you cover 60 squares with 30 dominoes, you will be left with 2 uncovered squares of the same color that cannot be adjacent, and therefore that cannot be covered by the last domino.

• **Marble Scramble.** "Imagine that you have three boxes, one containing two black marbles, one containing two white marbles, and the third, one black marble and one white marble. The boxes were labeled for their contents—BB, WW and BW—but someone has switched the labels so that every box is now incorrectly labeled. You are allowed to take one marble at a time out of any box, without looking inside, and by this process of sampling you are to determine the contents of all three boxes. What is the smallest number of drawings needed to do this?"

Solution: One—as long as you draw from the box labeled BW. If the marble you draw from this box is black, you know that the other marble in the box must also be black, since the labels on all three of the boxes are incorrect. The box marked WW must, therefore, contain one black marble and one white marble (you have already identified the box with two black marbles, and the box is labeled WW incorrectly). The remaining box contains two white marbles. The same reasoning can be applied to the problem if the marble you draw from the BW box is white instead of black.

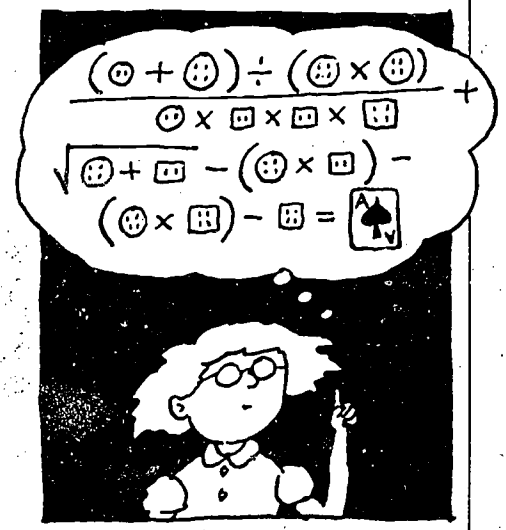
A SYSTEM OF YOUR OWN

Students have a chance to understand number systems from the inside out when they make up their own (from *New Concept Mathematics 2*). A cup, for instance, may be an arbitrary measure, having a forgettable relationship to a quart, but give a kid the opportunity to create his own units with which to calculate, and watch his commitment to numbers go up!

Get the class started by listing combinations of objects that could be used to represent different values in various number systems. For example:

Money: small buttons, large buttons, playing cards
Length: matches, straws, sticks
Weight: pebbles, marbles, stones
Capacity: thimbles, egg cups, jars

Divide students into small groups and provide each with the materials specified for a new number system. Each group decides, for example, how many small buttons equal one large button, and how many large buttons equal one playing card. When equivalencies have been determined, each



group will have its own number system that can be written down in chart form. Students can then experiment with writing word problems based on their own—or another group's—unique set of equivalencies.

Science

SIGHT SIMULATORS

Eye diseases and malformations vary in origin, severity and effect. Students studying the eye and learning about vision may benefit from working with a set of simulators that demonstrates how different abnormalities affect sight.

You will need four pairs of Styrofoam cups for each set of simulators. Students look through one or both cups at a time to see what the world would look like if the condition were present in one or both eyes.

For the first pair, cut three slits in the bottom of each cup. Looking through the cup will produce a dotted effect, representing conditions in which tears in the retina create patchy vision.

For the second pair, cut the bottom off each cup and tape waxed paper over the opening. The cloudy images seen through the paper represent the eyesight of cataract sufferers.

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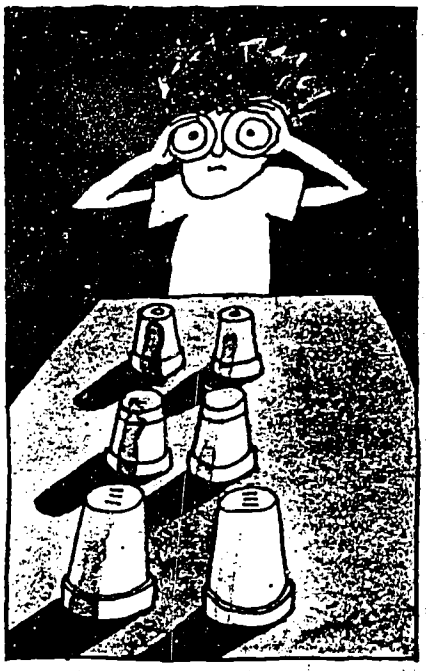

To represent the loss of peripheral vision, cut a small hole (about the size of a dime) in the center of the bottom of two cups. To represent peripheral vision, or loss of central vision, cut the bottoms off two cups, cover with clear plastic wrap, and place a dime-size circle of white correction fluid in the center of each.
Idea by: Laura J. Gray, Saint Louis, Mo.

CLEARING UP CONFUSION

Transparent plastic overlays, such as those found in encyclopedias and medical books, can help students see more clearly the location of organs within the body and their relationships to one another.

For each child in the class, run off an oaktag ditto of an outline of a human figure. Each student then cuts two plastic sandwich bags down the seams. The resulting four sheets of 6-by-9-inch plastic are stapled along the left-hand side of the oaktag.

With permanent felt-tipped markers, students draw color-coded, labeled overlays of the body organs that make up the digestive system, the respiratory system and so on.
Idea by: Janet Spafford and Becky Passmore, Erie, Pa.

Arts & Crafts

CLASSROOM POSTCARDS

With the cost of postage going ever upward, the economical postcard is becoming a popular means of communication—one no longer reserved for vacationers' messages home. Involve your students in creating their own "postals" for future language arts activities or for home use, and give them the double opportunity to express themselves in pictures and in words.

Cut several sheets of posterboard into 3½-by-5½-inch pieces. Provide students with an assortment of pencils, pens and markers; magazines; scissors and glue. Suggest that students design cards that say something about themselves visually, or that convey part of their message, if the creator has a special recipient in mind.

Postcards may no longer deliver your thoughts for a penny, but they are still an inexpensive means of staying in touch.
Idea by: Jule Marine, Salt Lake City, Utah.

ON PINS AND NEEDLES

Minimal materials (and messes) make pinhole pictures a welcome artistic activity.

On colored construction paper, children draw a simple outline of a picture or design. The pictures are then placed over newspaper padding, and children pierce them with pins, making tiny holes as close together as possible. For fancier designs, children can experiment with different sizes of needles and pins, or they can deliberately poke holes closer together in some areas than in others to create various shading and tinting effects.

The finished products can be displayed on windows or hung as mobiles from the ceiling or lights.
Idea by: Helen Wubbenhorst, Mesa, Ariz. ■

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Celebrity Trash Yields Teaching Treasures

BY SONJA LUTZ

A golf cap from professional golfer Lee Elder, a second draft of a yet-unpublished short story from author Louis Auchincloss—these are just two of the by-products of a letter-writing unit that encompassed research, composition, speaking, listening, and many intangible skills that only a teacher can identify.

The nucleus of the unit was to have each student write to a notable person and ask him (or her) to send something from his trash that was representative of himself. The unusual request seems to appeal to celebrities; the response rate in my class was high and the trash was fascinating.

As with every teaching unit, careful preparation is necessary. The following is a step-by-step plan for carrying out this offbeat but worthwhile project:

1. *Names and addresses*. Depending on the class and the availability of resource material, either have a sign-up sheet with names and addresses of notables listed, or let the students choose their celebrities and research the addresses themselves. Addresses can be found in *Who's Who in America* and *Current Biography*, or in the case of an author, by writing to him in care of his publisher.

2. *Biographies*. Because it's important that the students know something about the person to whom they're writing, I asked each student to prepare a short biography, based on library research, about his chosen celebrity.

3. *Letter writing*. After reviewing standard business-letter styles, we developed a basic form letter:

Our class is doing a project on notable people, and I have chosen you to research. I have already written a biographical sketch about you. I would like an item from your wastebasket to display with my research. To help me complete the project, would you please dip into your wastebasket and choose something interesting and representative of yourself to send to me?

I would greatly appreciate your cooperation.

The students had the option of copying the letter verbatim or using their own words. In either case, the final product had to be letter perfect before being mailed.

4. *Waiting*. During the interim between mailing and response, our class focused on other forms of letter writing: personal letters, invitations and thank-you notes.

Unit Extensions

Such was the enthusiasm of class members who received responses, and such was the disappointment of those whose letters were never answered, that many students chose new personalities to research and write to. For this round, it was mandatory that the student vary the form letter with a personal note of his own. I also asked that the students write thank-you notes to the people who had responded.

The basic assignment accomplished, the class and I came up with some ideas on how to make the most of our new-found trash. First there was the "Celebrity Trash Exhibit." Students prepared a posterboard display of each item, accompanied by the biographical sketch about the notable person from whom the item came.

Some students chose to present their items in the form of show-and-tell speeches. Others performed a dramatic reading of a script that was sent in by actor Henry Winkler.

Several months later, as follow-up, I had the students research historical figures and try to imagine what kinds of trash those people might have sent in their day. The students then wrote letters to themselves, in the style of the historical personality, to accompany the particular items decided on.

Dear Brenda,

I do hope the enclosed quill pen will be a fitting item for your project. I used it to write Frankenstein. *Do you know the story?*

Sincerely yours,
Mary Shelley ■

Sonja Lutz is a teacher in Belle Glade, Fla.

Idea Place

Middle and upper grade teachers should not overlook the many easy-to-adapt activities described in the Early Grades section of Idea Place.

Language Arts

CREATIVE EXCUSES

Most students have a natural talent for making up excuses. Use it to give them practice in constructing sentences in basic patterns, and to foster imaginative thinking. (From *A Writing Guide for Missouri Schools K–12*, Missouri Department of Elementary and Secondary Education.)

Provide a range of categories—excuses for being late, excuses for forgetting to do something, excuses for breaking a promise, excuses for some bad habit—and offer a few sample excuses to get students started:

"I was late because my shoelace got caught in the floor heater and I couldn't get it untangled."

"I didn't mow the lawn because an eclipse happened just as I was starting and I couldn't see well enough to complete the job."

PUNCTUATION ON TAPE

To help students understand the importance of punctuation as you provide practice in its use, try this activity from *Creative Teaching of the Language Arts in the Elementary School* (second edition, Allyn and Bacon).

Choose a short story and copy it onto a ditto master, leaving out all marks of punctuation. (Do leave space for the marks, however.) Then read the story aloud into a tape recorder, going slightly slower than usual and exaggerating somewhat to indicate the presence of punctuation.

Hand out copies of the unpunctuated story to the class and play the tape. As the students listen, they follow along on their copies, filling in the missing punctuation marks. To extend the activity, copy the story without capital letters as well, and have students indicate where capitals belong in addition to punctuation marks.

STORIES WITH VARIETY

A solution to the problem of monotonous writing could be this game, which calls for teams of six students ea[illegible] to write stories comprised of s[illegible] kinds of sentences.

[illegible] the first student on each team a sheet of paper, and have him write a *statement* about something that happened to him in school that day (or choose some general topic, such as pets or winter fun). When he's finished, he passes the sheet to the next student on his team. The second student continues the story with a sentence in the form of a *question*. The third student adds an *exclamation*. The fourth tries to complete the story by adding a *command*.

Student number five reads the completed story, decides on the main idea, and chooses an appropriate title. The last student on the team proofreads the story, checking for proper sentence structure and correct punctuation, then brings the story to the teacher's desk.

When all stories have been submitted, read each one aloud to show how varied sentence structure adds interest to a story. Then try another round, with a new topic and with students changing places on their teams.

Idea by: Peggy Salzman, New York, N.Y.

Mathematics

EQUATION SCRABBLE

Scrabble is the model for this number game (from *Card Games for Mathematics*, K and W Publishing Co.), in which players build equations rather than words. The game, for two, three or four players, gives students practice with basic math operations.

Materials needed are a gameboard and 80 number and symbol tiles. To make the gameboard, copy the basic Scrabble pattern, but instead of marking "double letter score," "triple word score," etc., simply blacken those squares. Place an equals sign in the center square. To make the set of number and symbol tiles, follow this breakdown: fifteen each of =; five each of 2, 3, 4, 5, 12, +, −, ×, ÷; four each of 8, 10; three each of 6, 9, blanks; two each of 11; and one 7.

To play, students place the equals-sign tiles faceup in one pile, and the remaining 65 tiles facedown in the center of the table. Each player draws 7 tiles from the facedown pile. The first player (the one with the tile of the highest value) places an equation on the board, using the equals sign in the board's center square. Thereafter, players take turns making equations, either vertically or horizontally, using one of the tiles already on the board. A player may use an already played equals sign for her equation, or she may trade in one of her tiles for an equals sign when she is ready to place an equation on the board. A blank tile can represent any number or symbol the player wants, and it maintains the same value throughout the game. If a player cannot make an equation with the tiles in his hand, he may use his turn to exchange any number of tiles.

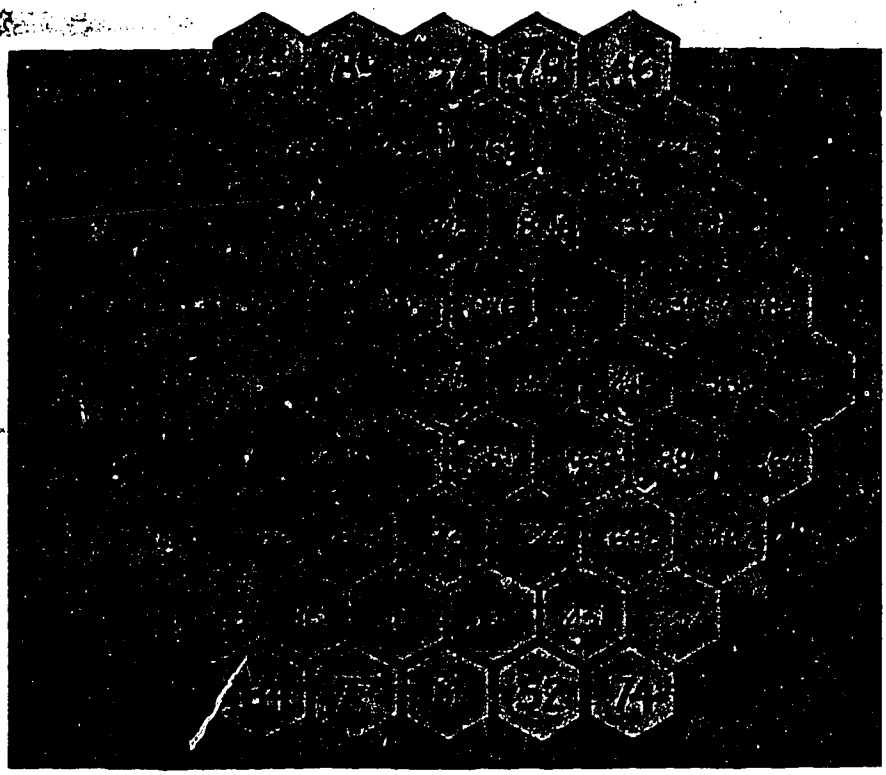
For every tile in their equations, players receive one point. An equation that covers one of the black squares on the board scores two points per tile.

After each turn, players replenish their tiles by drawing from the facedown pile. The game ends when the pile is depleted or when one player uses all his tiles—which earns that players a five-point bonus. The player with the highest score is the winner.

DECIMAL SHAPES

Which is larger, .5002 or .8? It's often hard for students to remember. Give them practice with this Chinese checkers–like board game from *Mathematics for the Middle Grades (5–9)* (National Council of Teachers of Mathematics).

You will need: a gameboard marked as shown in the illustration; five markers of a single color for each of two



players; and one chip, marked *L* (for larger) on one side and *S* (for smaller) on the other.

The two players each choose a side of the board and place their markers on the starting positions (enclosed in darker lines). The first player flips the chip. If it comes up *L*, he moves one of his markers to an adjoining space having a number larger than the number the marker is on. If the chip comes up *S*, he moves to an adjoining space with a smaller number. A third student acts as judge, making sure the players' moves are correct.

If one player moves his marker to a space already occupied by the other player's marker, the other marker is returned to a starting position. Only one marker may be on a space at a time.

Players must move their markers, no matter in what direction, if they are able to do so. Otherwise, they lose the turn.

The winner is the first player to get all five of his markers to the starting positions on the other side of the board.

MATH WAR

This fast-paced card game gives students good practice with multiplication and also provides a use for incomplete decks of cards. Just be sure both players get an equal number of cards.

The two players place their cards facedown and turn over their top card. Whichever player gives the product of the two numbers first gets to keep the two cards. Jacks have a value of 11, queens of 12, and kings automatically win. If each player turns over a king, both cards remain on the table. The winner of the next play takes the kings as well.

For enrichment, three or four children can play the game together, creating two- or three-step problem solving. Younger children can play the game with addition or subtraction.

Idea by: Carol Codella, Lake Parsippany School, Parsippany, N.J.

Social Studies

OLD FILMS IN NEW ROLES

In these times of scarce money for new teaching materials, free resources are especially valuable. A real treasure may be collecting dust in the library: old school films.

Films made 15 or 30 years ago make excellent social studies teaching tools. Students have no trouble seeing how different the social attitudes displayed in a 1955 film are from the attitudes of today. Some of the films made about politics at the height of the cold war give heightened meaning and interest to readings about that period. And films made by oil and electric companies in the fifties and sixties encouraging people to use more energy can cast an interesting light on today's energy crisis.

Use such films as jumping-off points for discussion and reading in social studies—as well as to teach critical thinking in all areas of learning.

Idea by: Joe L. Kincheloe, Mission, S.D.

BIRTHDAY NEWSPAPERS

Students are apt to take a closer look at the newspaper when it's one that was published on an especially important day. To motivate students to read and analyze front-page news, and to foster their interest in historical and current events, present each of your students, on their birthdays, with a copy of the front page of the newspaper that came out on the day they were born (copied from a library's microfiche file). Present the student, as well, with a copy of the front page from the current birthday's paper.

Have the student read both front pages to the class (or, in the lower grades, read the pages yourself).

Discuss the events of both years. What was happening on the earlier date? Are similar things happening now? Help children to see themselves in a broader historical perspective.

Idea by: Tom Collette, El Granada Elementary School, El Granada, Calif.

(continued)

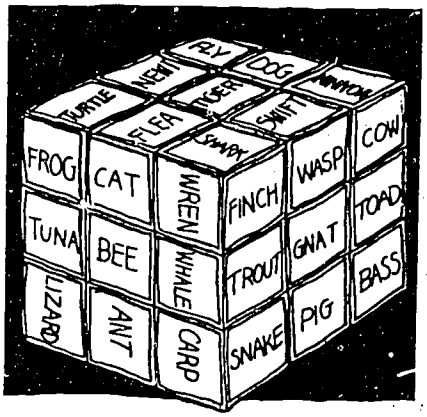
Idea Place

Potpourri

CATEGORY CUBE

Students familiar with the Rubik's Cube will find a different kind of challenge in the "category cube"—a device that tests their ability to discern relationships among given elements. The exercise can be adapted for any subject area.

The first thing you need is a more or less cube-shaped box. Cover the



box with a dark-colored felt. Then cut—out of light-colored felt or some other material that will adhere to the box—54 small squares, of a size that will permit you to stick 9 squares on each side of the felt cube.

Next, decide on an area of study in a particular subject that comprises at least six categories. Some examples include:

—language arts: parts of speech (nouns, verbs, adjectives, pronouns, prepositions, adverbs);

—mathematics: multiplication tables (multiples of 2, 3, 4, 5, 6, 7);

—science: animal classifications (birds, mammals, reptiles, insects, fish, amphibians);

—social studies: geographical groupings (countries, capital cities, seas, rivers, mountains, deserts).

Having chosen the six categories, list nine items that belong in each—for instance, under "nouns" might go: *telegraph*, *comedian*, *cat*, etc. Print or type on each felt square one category item from the list (54 in all). Stick the felt squares, in random order, on the felt cube—nine squares to a side. Then have small groups or individual students try to rearrange the squares so that each cube side shows nine items belonging to the same category.

Idea by: Sister Roberta Ann Leskey, Philadelphia, Pa.

BLANK BOOKS

Blank books are an irresistible invitation to create, collect or compose. You can make them for your students simply and inexpensively.

Cut sheets of white art paper to a size of 6-by-12 inches. For the cover of the book, cut a rectangle of fabric 7-by-13 inches. A heavy fabric such as canvas, corduroy, felt or fake fur works well. Decorate each cover, if you wish, with a child's name or with a design.

Center about six sheets of paper on the fabric cover. Fold the top sheet of paper in half, unfold it, and use the crease as a stitching guide. Using a sewing machine, stitch through the paper and fabric with a long stitch.

Present the books to the children and discuss how they might be used. Some possibilities include:

—to write a poem or story

—to keep a diary

—to make a collection of words, stamps, pictures

—to draw pictures

—to use as a photograph album

—to make a joke book or comic book

—to collect autographs

After several weeks, invite students to share their no-longer-blank books with you and the rest of the class—on a voluntary basis, of course.

Idea by: Carol Lauritzen, Kansas City, Mo.

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POSITIVE NOTE BOX

Start the new year on a truly positive note by setting up a box in which students deposit only messages of praise for their classmates. The approach not only serves to downplay negative attitudes and comments, it also encourages children to look for the best in others.

To make a Positive Note Box, decorate a shoe box and cut a slit in the lid. Place pencils and paper next to the box. Whenever anyone in the class (including the teacher) sees someone doing something kind, thoughtful or positive in any way, the observer writes it down on a piece of paper and drops the note in the box.

Once a week, open the box and read the notes aloud (or have students read them). Those noted for their good deeds appreciate the praise, and everyone enjoys the satisfaction that comes with accentuating the positive.

Idea by: Rebecca W. Graves, Smith School, Burlington, N.C.

25-THINGS-TO-DO LIST

Because students work at such different rates, teachers are always being confronted with the question, "What should I do now?" from those who complete their assignments before the rest of the class has finished. One solution—which moves the responsibility of finding an independent task from you to the student—is to have each student create his own list of answers to that question.

Some "things to do while everyone else is still working" include: read from a library book, write a story, implement an art idea, memorize a favorite poem—the possibilities are limited only by students' imaginations. Of course, all lists must meet your approval—a fact students should be apprised of before they start listing. And you may want to keep a check on students' progress on accomplishing the tasks on their lists. (You'll probably find that when students develop their own lists of tasks, they're more likely to be motivated to carry them out.)

Idea by: Greta Nagel, Belmont, Mass. ■

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Let Their Fingers Do the Learning

BY JUDY ARONSEN

Teachers are always on the alert for free or low-cost teaching materials. One readily available—and often overlooked—resource is the telephone directory.

The greatest advantage of using the phone book as a supplement is its adaptability. The same book used by third graders in language arts can be used by sixth graders in math and by eighth graders in social studies. The following suggestions are meant to be expanded upon or simplified, according to the particular needs and abilities of your students. The ideas can be developed into an entire unit or used as supplemental activities; they can be individualized or designed for group work.

Resourceful Research

Present students with various hypothetical problems whose solutions are to be found by using the Yellow Pages. Have them pretend they are new in town (or use out-of-town directories) and ask them where they would go or whom they would call in such situations as the following:

- Your pet Doberman pinscher has bloodshot eyes and sneezes constantly. What should you do?
- You are looking for the latest record album by Andy Gibb, but you haven't much time to go out shopping. How can you find out which store has it?
- You accidentally threw a rock through the living room window. How can you find out how much it will cost to repair it?
- Your favorite cousin is coming to visit. His favorite dish is fresh lobster. Where can you take him for dinner?

To help students find the solutions, provide them with a chart on which they can write such information as service or item needed, topic to look under, name of store or business, address and telephone number. The chart will help them organize their thinking and find the necessary details. Adapt the situations and information requested to the abilities and interests of your students.

Ideas for All Subject Areas

Math. At the front of the directory are several pages that explain how to compute long-distance rates. The charts on these pages are good sources for practice in reading tables and using math skills, and provide for a wide range of activities, from simple to complex. Questions for younger children, for example, might deal only with the cost of a one-minute phone call. Have students compare the cost if the call is made at different times of the day, on different days of the week or when the operator is asked to help.

More challenging questions could require students to use more than one table to formulate an answer. Here are some samples:

- You want to call your grandmother in Milwaukee to wish her a happy birthday. How much will it cost you if you call at 10:00 Monday morning and talk for four minutes? How much money will you save if you wait until 8:00 Monday evening?
- Your best friend moved to New York City last month. How much would a ten-minute call to your friend cost if you called at the following times: 4:00 on Saturday afternoon? noon on Thursday? 7:00 Tuesday morning? What is the difference between the cheapest and most expensive rates?
- What is the difference in cost between these two calls: a five-minute direct-dial call to Dallas on a Sunday morning and the same call made person-to-person on Monday at noon?

A little geography can be tied in here with questions that relate cost to distance: Based on the costs of one-minute calls to Omaha and Los Angeles, which city do you think is closer to you? Check your answer by looking on a map or globe.

Challenge students' reasoning skills with such questions as: How could a four-minute call to Denver cost less than a four-minute call to Minneapolis if you are farther away from Denver? Have students support their answers with rate and discount information.

Language Arts. Classes studying the use of persuasive language in advertising will find many examples in the Yellow Pages. Have students thumb through the section to identify slogans ("Where Value and Quality Meet Your Budget"), influential words and phrases ("superior," "economical," "top quality") and enticing services ("free estimate," "prompt delivery," "no deposit necessary"). Ask students to select what they consider to be an effective ad and to explain why they feel it works so well. Or ask each student to scan the Yellow Pages and make a list of words and phrases—some persuasive, some strictly factual. Students then exchange lists and identify the terms as persuasive or factual.

Social Studies. In addition to the geography-related activities already mentioned in connection with long-distance rates, the Yellow Pages offer a wealth of possibilities for the social studies class. A great deal of cultural information about a community is revealed through the business, leisure and educational opportunities listed. Have students examine the phone book of their city or town to see what they can learn about the area. What sorts of businesses are advertised (agricultural, financial, service, technological, manufacturing)? What kinds of restaurants are available? How many different medical facilities are listed? What sorts of recreation are available? Are there any colleges or universities, private or parochial schools? Let students make their own discoveries by finding answers to such questions as these: Is there any topic or service that seems extensively listed? What businesses seem most common? Are there any unusual or unexpected listings? What kind of picture do the Yellow Pages give you of your community?

Once students understand this analysis technique, provide them with directories from various and contrasting parts of the country: Boston, Detroit, Phoenix and Seattle, for example. Or choose communities closer to home but with different populations or activities. Do a comparison study of the different areas. This activity will not only teach students about the areas discussed, but will also demonstrate the use of the phone book as a research tool.

The potential of the telephone directory in the classroom is great. With its multi-uses and adaptability, it can meet many needs. ■

Judy Aronsen is a former classroom teacher.

Idea Place

Middle and upper grade teachers should not overlook the many easy-to-adapt activities described in the Early Grades section of Idea Place.

Language Arts

GUERRILLA SCRABBLE

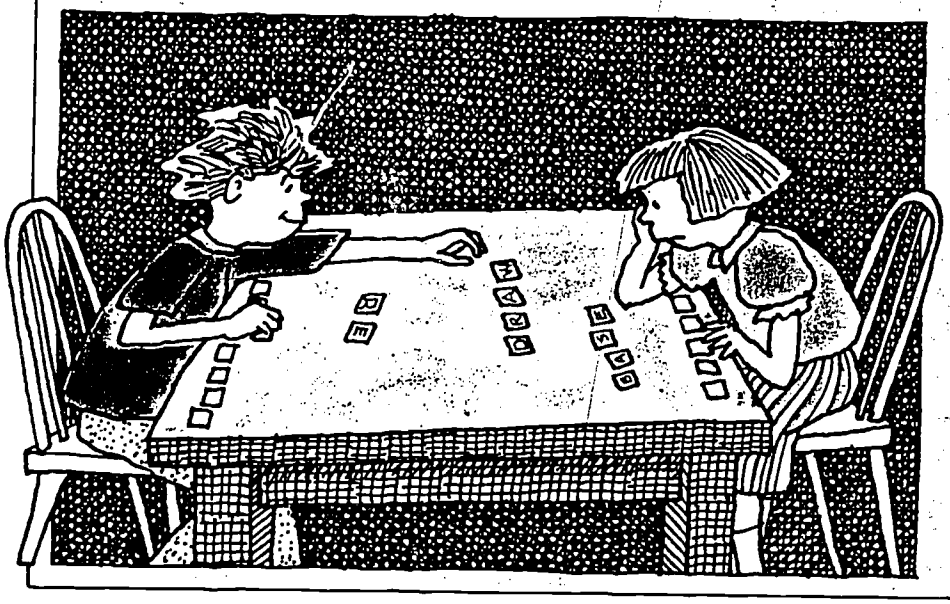
All's fair in this fast-moving version of Scrabble (from *Parlor Games*, Addison-Wesley), including surprise raids on opponents' words. The object is to make words as quickly as possible.

Using the letter tiles from a Scrabble game, two or more players sit at a table with the letters placed facedown along the periphery. They should leave a fairly large space in the middle.

To begin, players take turns placing tiles faceup in the center space. As soon as any player sees a word that can be made from the faceup letters, she calls it out and places the word in front of her. (You may want to require players to use words of four or more letters.)

As the game continues, players may steal words from one another to make new words. They may combine the letters in any way, as long as the new word is not simply another form of the original. For example, a player might steal *heart* from an opponent to make *heater*, but she could not steal it to make *hearts*.

The first person to make ten words wins.



NEWSPAPER BOOK REPORTS

A newspaper format gives a new look to book reports. It also helps students identify the important parts of a story and become familiar with the newspaper.

To prepare the book report form, write the newspaper logo, "The Reporter," at the top of a ditto master. Leave space for a headline and byline, and mark off four columns, plus a section labeled "Classified Ads." Leave space, too, for an illustration. Give a copy of the newspaper form to each student, and explain that students are to act as reporters on the books they've just read, completing their forms as follows:

Students first write the title of the book in the space where the headline should be. The author's name goes in the space for the byline. The four columns represent the questions every good reporter asks: *who*, *what*, *where*, *when* and *why*.

In the *who* column, students describe the book's main characters. They tell about the setting in the column representing *when* and *where*. Have them write a summary of the plot in the *what* column, and in the *why* column, tell why they liked or didn't like the book.

In the section labeled "Classified Ads," students tell where the book may be borrowed or bought. And in the space remaining, they illustrate a character or situation from the book.

The completed forms look like one-page newspapers and can be displayed for all to read—and perhaps to be enticed to seek out a new book.

Idea by: Robert D. McMullen, Kirkwood, Mo.

LIST ALL

List making can be an effective way to expand vocabulary and improve classifying skills. Begin by preparing

an assortment of "list-all" cards such as the following:

List all things that *fly*.
List all things with *four legs*.
List all things in a *zoo*.
List all things that *bend*.
List all things in a *kitchen*.
List all things that are *purple*.
List all kinds of *buildings*.
List all kinds of *sports*.
List all kinds of *vegetables*.
List all kinds of *jobs*.
List all kinds of *feelings*.

Add pictures to the cards, if you wish, to spark students' thinking.

Cover a coffee or juice can with construction paper, label it "List All," and place all the cards in the can. Then ask each student to select one card from the can. On a piece of paper, the student writes the italicized word or words and lists all the things she can think of that fit that category. If a student gets stuck, she can use research materials to help fill out the list.

You can extend the activity by inviting students to design posters or write stories or poems based on their lists.

Idea by: Linda Wong, Eugene, Ore.

Art by Allen Say

WRITE-A-STORY-CARDS

Cure the "I-don't-know-what-to-write-about" syndrome by having children make these team-effort story cards.

Pass out 5-by-8 index cards to the class. Have students draw vertical lines dividing the cards into three columns. Head the first column "Character." Ask each student to decide on a character to be the protagonist of a story. In this first column goes the character's name, three adjectives to describe his or her appearance, and three adjectives to describe personality. Students also list their character's interests, age and occupation or grade in school. When they're finished, they pass their cards to the person in back of them. The last person in each row takes his card to the front.

The heading of the second column is "Setting." Ask students to imagine a place and write down its name, what it looks like (at least three adjectives), the time of day, and current weather conditions. Finished cards are once again passed back.

The third column is headed "Problem." Here students should write a sentence or two describing the predicament the character faces.

The cards are passed back once more, and each student must use the information on his card to write a story that resolves the problem.

After the stories have been completed, ask students to staple the cards to their papers and hand them in. Read the stories to the class, or allow the writers to read their own. Since all the students have had a hand in creating the story situations, they're sure to listen attentively to hear how their characters and settings have been woven in and their problems resolved.

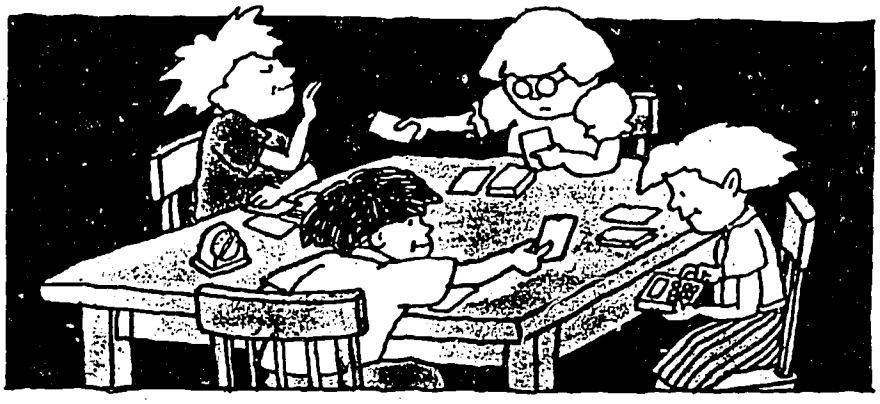
Idea by: Doris P. Miller, Rutland Junior High, Rutland, Vt.

Mathematics

SAY WHEN

A deck of regular playing cards is all you need for this game from *Math* (Learning Success). Similar to blackjack, it gives students practice in mental calculation.

Set a time limit of 10 or 15 minutes for the game. It's a good idea to have a timer that will ring when the set amount of time expires.



Before the game begins, two to four players choose a number to be their goal; in general, numbers between 20 and 50 work best. They then divide the deck of cards evenly among themselves and put their cards in front of them, facedown. In each play, one person is a "giver" and one is a "receiver." The giver hands cards from his pack to the person on his right (the receiver), faceup and one at a time. The receiver adds their values, counting aces as one and face cards as zero. He tries to get as close as possible to the established number without going beyond it. When he decides he has enough cards, he says "stop."

If he says "stop" in time, he keeps the cards in his hand. If his total has gone too high, however, he must give all the cards back to the giver, who puts them at the bottom of his pack.

The game continues until time is up. The player with the most cards in his pack wins.

FIVE-O

For this variation of bingo (from *Unique Math Games*, Educational Insights), each player needs several place markers and a 36-square grid filled with multiples of 5 up to 180. Make several different grid cards, if not a unique one for each student, so that players have a variety of number arrangements. Then create a master list of computations whose answers appear on the grid. A sample might be: *Start with 80. Divide it in half. Add 25. Subtract 10.* Basing the problems on the skill level of your students, you can make the computations as simple or as complex as you wish.

Students do each computation, either in their heads or on paper, and place a marker over the solution on their cards. Call out computations until someone completes a line vertically or horizontally and announces, "Five-O!" Have the winner read aloud the numbers in the filled row so that you can check them against your master list.

DENOMINATOR STRIPS

Here's a way to help students find the common denominator when they're adding or subtracting fractions.

On a piece of 1-inch square graph paper, have students make a times table chart for the numbers from 1 through 10, and then cut these charts into strips so that they have one number and its multiples on each strip.

They can then use the strips to solve problems. If they are adding $^3/_4$ and $^2/_8$, for example, they lay the 4 strip and the 8 strip next to each other, and readily see that 8 is the lowest denominator common to both fractions. If the problem is $^2/_3 + {}^4/_5$, they will see that 15 appears on both strips. If the denominator is larger than 10 ($^1/_8 + {}^2/_{16}$, for example), point

4	8	12	16	20	24
8	16	24	32	40	48

out that both 8 and 16 are on the same strip, which means that both denominators can be 16.

Demonstrate this process by making strips of your own with black marking pen. Put magnetic tape on the back so you can move them around easily on the chalkboard.

Idea by: Margaret Reschetz, Benjamin Franklin School, Decatur, Ill.

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Science

WEIGHING WATER

Water constitutes part of the weight of nearly everything organic. Students can find out just how big that part is in this experiment from *Nature With Children of All Ages* (Prentice-Hall).

You'll need freshly dug soil, a metal cup and a kitchen scale. An oven is useful but not absolutely necessary.

Weigh the cup of soil and record the result. Then dry out the soil by setting it on a sunny windowsill or in an oven, and weigh it again. Note the loss of weight, which indicates the amount of water evaporated from the soil.

Try this experiment with different kinds of soil and with other natural substances—a piece of bread or a slice of apple, for instance. Make up percentage problems: What percent of the bread was water?

MAKING GLUE

Everyone has made flour-and-water paste. Here's a somewhat more complex recipe that allows students to experiment with different consistencies for different results. (From *The Secret Life of Hardware*, Lippincott.)

There are two ways to approach this project: you can treat it as an experiment and have students try putting the ingredients together in different proportions to see which works best; or you can have students follow the recipe first, and then vary it and observe the changes.

Ingredients include: one package of granulated unflavored gelatin, one tablespoon sugar, two tablespoons water. You'll also need: a small saucepan, a small metal baking cup, a spoon, a potholder or tongs, and access to a stove.

The recipe is as follows: Mix the water, gelatin and sugar in the small baking cup. Let it stand for a few minutes until all the water is absorbed. Put the cup in a pan of water on the stove and heat it, stirring occasionally, until the water comes to a boil. Then turn the heat off and leave the cup in the water until the gelatin is dissolved. At this point, the glue is done.

Examine your glue by putting a little on a piece of plastic wrap stretched over a jar. Let it dry and peel it off. Then try gluing together some pieces of paper. If you aren't satisfied, make another batch, changing the proportions of the ingredients.

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Arts & Crafts

PRINT SILHOUETTES

Students can learn a new art process as they create intriguing print silhouettes. Materials needed are: a light source (filmstrip projector or lamp), heavy cardboard or matboard, masking tape, scissors or an X-Acto knife, a small print roller, brown or black water-soluble printer's ink, a glass or plastic surface to spread ink on, newsprint.

Use the filmstrip projector or lamp to project a child's silhouette on the cardboard. Trace around it with pencil and cut it out with scissors or X-Acto knife. Tape the silhouette to a piece of newsprint, and put several more sheets of newsprint underneath to serve as a cushion.

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Put a piece of newsprint on top of the silhouette. This sheet will become the finished print.

Squeeze a 2-inch ribbon of ink onto the glass and ink the roller, making sure that the ink is fairly thin. (Roll the roller across a clean sheet of newsprint to remove any excess.)

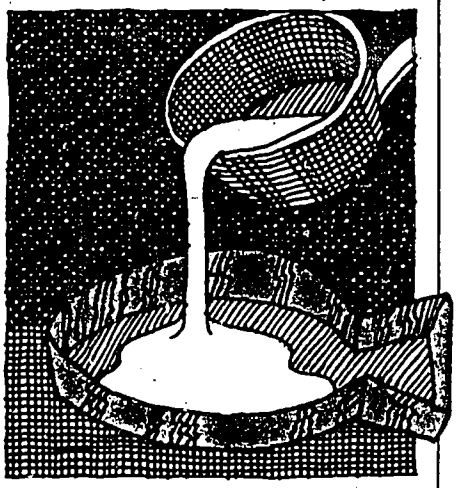
You are ready to print. Holding the paper down with one hand, run the roller over the newsprint, following the outline of the cardboard silhouette beneath it. Use different pressures to obtain lights, darks and half-tone areas.

Idea by: Bill D. Iaculla, Green Hill School, Millbrae, Calif.

FREE-FORM PLASTER CASTING

Children of all ages can make interesting plaster forms by using aluminum foil to make simple molds.

Cut a piece of foil about 12 inches larger than you want the finished casting to be. (Castings should not be more than 10 inches wide.) To give it strength and texture, crinkle it into a ball and spread it out again carefully. Starting at the edges, bunch it into the shape you want. Press the edges into a side at least 1½ inches high to contain the soft plaster.



Mix the plaster according to instructions. Pour it to about ¼ inch from the top of the mold. When it has set a little, you may insert a wire or paper clip if you want the finished product to hang.

When the plaster is dry, remove the foil and paint the casting if you wish.

You can also use this process to make a three-dimensional plaque. Insert artificial flowers, pine cones, figurines or other items when the plaster is partly set. The casting becomes the base.

Idea by: Beverly J. Anderson, Concord, Calif.

(continued)

Read a Novel; Create a Game

BY DANIEL KAIN

What have board games to do with the study of literature? That's what my seventh grade English class wanted to know the day I took out the overhead projector and began to draw a typical board game (using Monopoly as a model but without the place names) along with a set of tokens, a pair of dice and a stack of chance cards.

It didn't take long for my students to decipher my artwork, but they were baffled by what connection it had with the novel I had recently assigned or with the previous day's lesson, in which we had discussed the literary terms *setting*, *character* and *plot* (the elements of a novel). Some even questioned my sanity when I asked them to copy the game components I had just drawn and to label each part with one of those three terms.

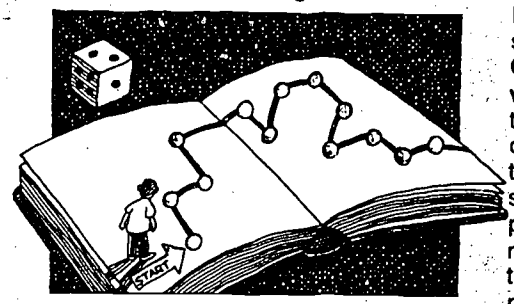
Later, during discussion, everyone saw the connection between the components of a board game and the elements of a novel: the gameboard is like the setting; a token is like a character; and the dice and chance cards are like the plot.

The next phase of my plan called for exploring the novel we were reading by creating (not playing, *creating*) a game based on its elements. I asked the students to imagine that they worked for Milton Bradley or Parker Brothers, and that their job was to create a new board game based on the novel we were reading.

What's in a Game?

The first step in creating a game based on a novel is to decide on the game format. Basically, there are two options: linear or cyclical. Linear games involve moving a token from start to finish as quickly as possible. Cyclical games, like Monopoly, involve moving a token around and around one pattern and acquiring property or some other goods. In choosing the more appropriate format, students must decide whether the main character in the novel has one specific goal, such as escaping a foe or reaching a destination, or whether this character is simply going through life acquiring things (money, experiences, clues or whatever).

For the novel we were reading at the time—Conrad Richter's *The Light in the Forest*—we chose a linear format, because the story is about a white boy who, having grown up in an Indian village, is forced to return to the white community, but ultimately flees back to his Indian home. We started creating the game before the students had finished reading the book—when the boy, True Son, had made the decision to flee the white world, but before the actual flight. Timing is important in game creation.



Students need to have read enough to understand the main character's situation, but not so much that they know the final outcome (in which case their interest declines).

I taped a large sheet of colored paper to the chalkboard. We brainstormed what belonged on the gameboard, and I wrote the students' ideas on the sheet. We considered such questions as: What should be the starting point? (The home on the Susquehanna). What might be the finishing point? (The Indian village). What geographical barriers might True Son encounter?

After we had reached a consensus through discussion, I transferred the ideas to the gameboard by drawing symbolic representations and writing appropriate labels. For example, a simple house represented the white home True Son was fleeing; a mountain represented an arduous trail True Son might have to take; a *P* stood for True Son's pursuers. Eventually we had one continuous trail of labeled spaces (with side jaunts and shortcuts) from the Susquehanna to the Indian village. We decided to use dice to move our tokens along the trail, but that the real "gaming" element would be in the consequences of landing on particular squares.

Here the students took over; they incorporated their knowledge of games with their knowledge of the book. What happens if a token lands on Uncle Wilse's house? Back to the start. What if a token encounters a pursuer? Back to start, unless the token is past Fort Pitt; then back to the fort and lose a turn. The students devised penalties for every difficulty True Son might encounter.

We even used some of the book's symbolism in our game. Near the beginning of the novel, Richter describes a magnificent old oak tree. One barren branch points toward the white world; a lush branch points toward the Indian world. The students created a spinner to represent this tree. At the last square, a player must spin it. If the brown part of the arrow points at the token, the player must return to the start. If the green part of the arrow points at the token, the player wins.

Further details about the game we created are not important. The point is that this project will work with any book. It will work with the whole class or with small groups. And it will provide valuable lessons in critical reading and in the study of literature.

First, because students begin creating the game before they've finished the book, they have the chance to review all the characters and events that may affect the outcome. Such review not only solidifies what *has* happened in the story, it also suggests what *will* happen. Second, since the game calls for taking the book's main character through a series of specific encounters, students are encouraged to see everything in the novel from that character's perspective. And third, the very process of turning the elements of a novel into a game perfectly exemplifies the importance of transforming what is abstract (literary terms and ideas) into something concrete and accessible.

Kids can even play the games they create if they want to, though that's not the goal. The fun, and value, is in the creation. ■

Daniel Kain teaches English at Bozeman Junior High School in Bozeman, Mont.

Art by Allen Say

Idea Place

Middle and upper grade teachers should not overlook the many easy-to-adapt activities described in the Early Grades section of Idea Place.

Language Arts

SPELLING ON TAPE

A cassette recorder can make spelling practice more fun and also more effective. Have three students work together with one recorder. Give each student a copy of the spelling list, a red pencil, a regular pencil and paper. One student turns the recorder on, speaks the first word aloud, and then spells it. As he spells the word, he and the other two students write it down. He repeats the word and the spelling four more times, so that all the students have heard it and written it five times.

The three students take turns doing one word at a time in this way until the complete list has been taped. At this point, they rewind the tape, exchange papers and listen to the tape from the beginning. As they listen, they look over the papers and circle with red pencil any words written incorrectly or unclearly. (There is no penalty for missing a word during this practice.) The correcting process lets them hear each word and its spelling five more times.

Idea by: Ruth L. Brown, Greenwich Central School, Greenwich, N.Y.

THE OBJECT OF THE STORY

A crate, a coat, a cot—any number of interesting objects can be used to spark students' ideas for writing. Look deep in closets, down in basements and up in attics for treasures you might take into the classroom. And consider these suggestions from *Written Expression in the Language Arts* (Teachers College Press):

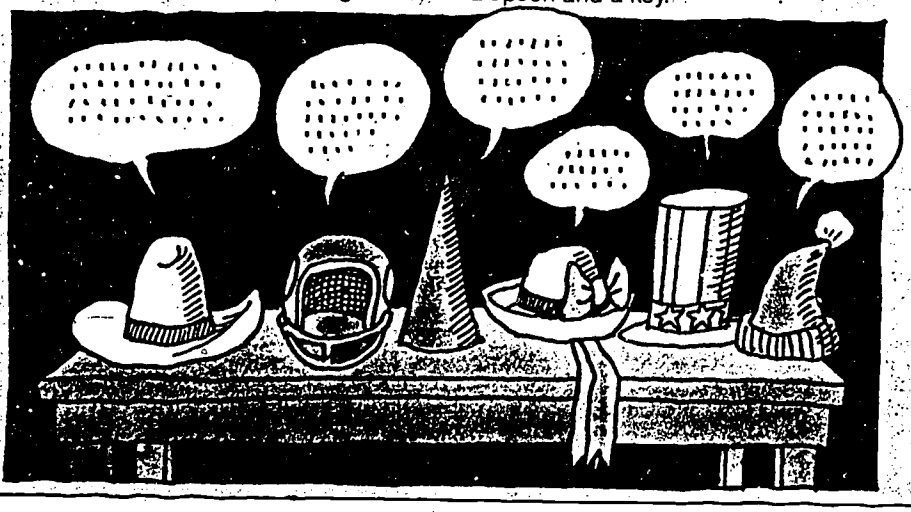
Hats: Collect a variety of hats—an Easter bonnet, a football helmet, a skier's cap, a black fedora. Have the class discuss the story that one of these hats might tell. Then ask each student to choose one of the other hats and write its story.

Coins: Bring in coins from far-off countries—Thailand, Turkey, India, Austria. Let the children examine the coins, then hold a class discussion about one of them. Again, each child chooses one of the other coins to write an imaginary story about.

Bags: Students can look at a beach bag, an airline bag, a duffel bag, a grocery bag and imagine where they've been or where they're going.

Pollutants: Objects that pollute—a plastic bottle, a box of detergent, a cigarette, a model car—can be the springboard for writing about the environment. Have students work alone or in groups to write a paragraph about a practical conservation idea related to one of the objects.

Miscellaneous objects: Place an assortment of objects in a grab bag and have each student select three or four things from it without looking. Each must write a story that is based on—or at least that mentions—these objects. Discussion or improvised dramatics can precede the writing. Objects in the bag might include a carrot, a glove, a feather, a bus ticket, a spoon and a key.

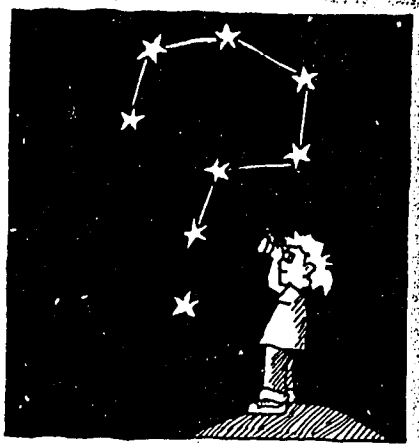


Art by Allen Say

Plan to do this activity more than once, and be sure to ask students to contribute objects to the class potpourri.

A STAR IS BORN

Legends about the constellations provide the impetus for a writing project in which students create—and explain—their own night sky.



Discuss with the class the stories of Cepheus, Orion, Cassiopeia and other constellations. Then have students give birth to their own constellations: Each draws a simple arrangement of stars on a piece of paper and writes a story to mythologize its origin. Stars in the shape of a question mark could accompany a story about an inquisitive child; stars in the shape of a four-leaf clover could inspire a story about leprechauns.

Cover a corridor wall outside your classroom (or an empty wall inside the classroom) with black or deep blue construction paper. Have each child set his or her constellation in the sky using foil star stickers. Put a small number next to each one, corresponding to the number of the legend. Post the legends at either end of the "sky."

Idea by: Lorraine Yadlon, Our Lady Star of the Sea School, Bayonne, N.J.

WEARY WORDS

As in cooking, the results in writing are only as good as the ingredients: bland food, bland meal; bland words, bland story. Perk up students' essays (if not their diets) with a list of "lively" words to replace "weary," overused ones. In this group activity (from *Language Games*, Teachers Publishing Corp.), the class develops a list to be

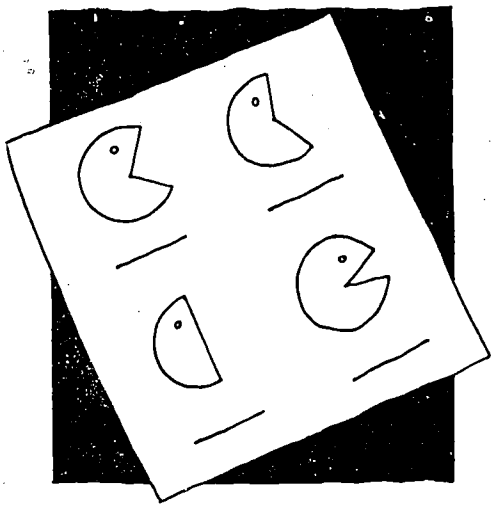
used as a writing aid.

Write a much-used "bland" word on the board—*ran*, for example. Use it in a sentence, and ask for some livelier words that could replace it. Together, you and your students might come up with *raced*, *hurried*, *zoomed* and *scurried* as lively alternatives to weary *ran*. Write them on the board, or put them on a chart for later use. Or have all students copy down the list in a notebook and continue to add to it on their own.

Mathematics

PAC-MAN GEOMETRY

Pac-Man, the popular video-game character, can add appeal to the study of angles. For drills about the difference between acute, obtuse and right angles, make up ditto sheets on which students must identify the kind of angle formed by Pac-Man's mouth.



Idea by: Hayward Adams, Glen Urquhart School, Beverly Farms, Mass.

METRIC CHALLENGES

Enlist students' imagination and competitive spirit to help them learn the metric system. Designate one area of the chalkboard as the Challenge Board, where students may write their claims to fame. The only requirement for making an entry on the Challenge Board is that the "record" pertain to something measurable: for example, fattest big toe (Stacey), longest lunch box (Leonard), heaviest tennis shoes (Pat).

Up to two other students may challenge a claim to fame, proving their cases by measuring with the appropriate metric unit. Winners are allotted a page each in a class record book that is compiled during this unit of study. On their pages, record-holding students write out their claims to fame and illustrate them.

Idea by: Shirley Schultz, Dartmouth Elementary School, Richardson, Tex.

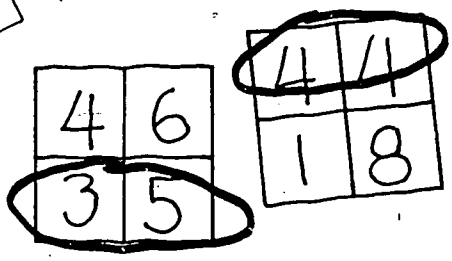
SQUARE MATCH

This simple matching game (from *Addition and Subtraction Games and Ideas*, Instructo/McGraw-Hill) gives students practice in addition facts.

To make the playing cards students will use, cut posterboard into 30 squares on which you write four numbers between 1 and 10.

From two to five students may play. They lay all the squares facedown on a table and each draws one square to determine who goes first. The person whose square has the highest number in the upper-left corner begins.

After returning their single cards to the table, the players each draw five squares and hold them so that others cannot see the numbers. The first player places one square faceup on the table. The player to her left examines his cards to see if any of them has a vertical or horizontal sum that matches one on the first square. If it does, he must correctly give the sum of those numbers and then put his square down next to the first one.



Any player who cannot make a match must draw another square from the table. If he cannot match this square either, he loses his turn. The winner is the first player who uses all his squares.

For a more advanced game, students play the same way but keep score by adding the numbers of the card played to the numbers of the card played on. The winner is the player with the highest score at the end of the game.

Social Studies

YOU ARE THERE

Current events take on immediacy when students imagine themselves right into a situation. Bring in intriguing newspaper articles, particularly ones that leave the reader with unanswered questions—for example, an account of explorers discovering a previously unknown tribe, a report on a kidnapped diplomat, or a science article predicting the coming of a new ice age.

Read the articles aloud and discuss them with the class. Use a map to pinpoint the setting of each event, and then have students write their own first-person accounts in which they imagine themselves participants and add missing facts of their own invention. Volunteer authors may read their finished articles to the class.

Idea by: Fran Bush, Ogden, Utah.

THE BETTER BUY

What determines a "good buy"? Is it price alone? Give students a taste of consumer know-how with this week-long bread-testing activity.

Buy six loaves of bread, one fresh and five a day old. Make sure the prices are clearly marked; the day-old bread should have a reduced price.

Cut the fresh loaf and one of the day-old loaves into as many slices as you have students. Mark the slices of day-old bread with a dot of red food coloring. Then give a slice from each loaf to each student, not revealing which loaf the marked slices come from.

Have the students taste the bread and write down whether the dotted slice is fresh or day-old, and which slice they think tastes better.

The next day, repeat the activity, using a new fresh loaf and another of the day-old loaves (now two days old). Dot either of the loaves to distinguish it from the other.

After each day's activity, tell your students which loaf was which. Compare the prices. Discuss which one tastes better and has the more appealing texture. Consider what the bread is to be used for: toast? bread crumbs? feeding the pigeons? Ask students which loaf is the better buy.

On the third or fourth day, bring the class a recipe that uses bread or

Idea Place

toast. Divide the class into two groups and have one group make the recipe using the fresh bread and one using the older bread. Let each student sample both batches, again without knowing which is which. Ask, "If you were making this recipe, which bread would be the better buy?"

At the end of the week, compare the older loaf of bread (now five or six days old) with a fresh loaf. Discuss how you might use the older bread: Would you use it in a sandwich? Make toast with it? Feed it to the birds? Throw it away? How much is a five-day-old loaf of bread worth? Where did its value go?

Idea by: Holly Van Scoy, Austin, Tex.

PICK A PROJECT

Students who are quick to finish assignments often distract those who are still working. You can deal constructively with this problem by setting up a special projects table.

You'll need a round board about 2 feet in diameter, a revolving base for it, and a recipe-card file box for each school subject—math, reading, social studies, science, art, etc. Fasten the boxes at intervals around the board and then place your creation on a table.

Label the boxes, and in each one put cards on which you've typed directions for simple projects to be done by individuals or by pairs or groups of students. A card in the science box, for example, could contain directions for an experiment proving that a plant absorbs water through its roots and carries it to its leaves. An art card might instruct a student to draw a seasonal picture, or illustrate a story read in class. A social studies card might ask the student to pretend she's on a trip to Japan and write a letter home telling about a day in Tokyo.

Change the cards in the box every three or four weeks so that projects can be suited to the current studies or season.

Set up a sign-up sheet that students can use to reserve a time to share their projects with the class. As time goes on, they may also want to add project ideas of their own to the card boxes. Place these in the collection after you have approved them.

Idea by: Wanda Mikkelson, Minot, N.D.

Potpourri

HELP WANTED

Encourage students' feelings of responsibility and belonging by "employing" them to do necessary classroom tasks.

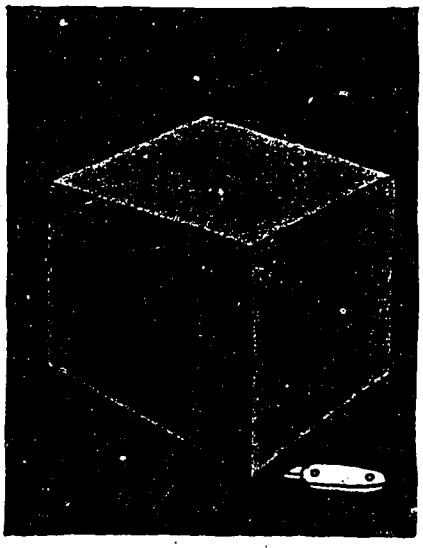
Start by creating a bulletin board on which you list jobs that youngsters can apply for. Use the help-wanted section of the newspaper as a background and as a model for your listings: Under the heading Help Wanted, divide the space into such categories as Monitors, Messengers, Caretakers and so forth. Within these sections, post individual job descriptions and their requirements. Have students apply for openings that appeal to them by either filling out a form you supply or writing a short essay. Also ask the class to think of jobs or volunteer projects that can be done around the school. Students might suggest library aides, tutors, students

to read stories onto tape, bulletin board and art display coordinators, office messengers, lunchroom helpers, and babysitters for days when the school is used as a voting place. Post these positions, too, along with the qualifications required for them, on the bulletin board. All job descriptions should clearly state the time commitment—a month, a quarter, a semester—students will be obligated to make.

Idea by: Susan J. Kreibich, Winona, Minn.

PORTABLE STUDY CARRELS

Students who need the privacy of individual study carrels can make their own—increasing the value but not the cost of their work areas. Start by bringing large, sturdy cardboard boxes to class. Then help students cut U shapes that remove most of two sides of their boxes.



The result is stable, portable dividers that can make a study carrel out of any table or desk top. Students may protect and decorate their carrels using pieces of colored self-stick vinyl.

Idea by: David B. Hakan, Fort Scott, Kans.

Idea Place presents an assortment of practical teaching techniques selected from two kinds of sources: commercially available materials and short ideas submitted by readers. Our purpose in printing ideas from commercial sources is not necessarily to recommend specific products but to make available excellent activities that might otherwise not come to the attention of our readers.

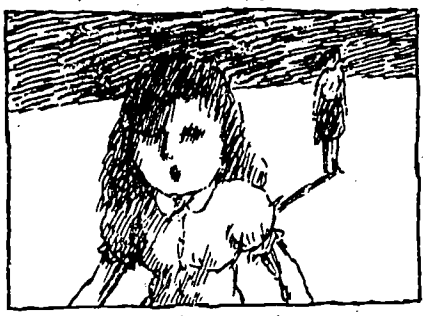
Learning magazine will pay $25 for original teaching ideas selected for publication in Swap Shop and $10 for original teaching ideas selected for use in Idea Place. Suggestions will not be returned; so you may wish to keep a copy of your idea for future use. Limit your item to 600 words and submit it, along with a self-addressed stamped response envelope, to: Swap Shop, *Learning*, 19 Davis Dr., Belmont, CA 94002.

Living and Learning Through Junior High

BY JOAN SCHEFF LIPSITZ

The shock I received when I became a junior high teacher is one I'll never forget. The difference between teaching at that grade level and any other in my experience stunned me so much that, like the Ancient Mariner, I'm eager to talk to anyone who will listen to my tale.

What angers me to this day is that I, like so many junior high school teachers in this country, had very little preparation for teaching young adolescents. I survived that traumatic year teaching junior high, my students survived, and together we were able to transform my ignorance into a positive experience for everyone. But I



Art by Allen Say

regret that it took so much energy, both physical and emotional, to create a learning and living environment in my junior high classroom. There are many things I wish I had known.

I wish I had known, for instance, just how critical a time of development early adolescence is. Physically, it is a time of the most rapid growth and change in the entire human experience. In cognitive terms, it is the time when the capacity for hypothetical, abstract thought begins to develop; when young people begin to define themselves as social beings with a sense of commitment to their personal futures and to their society. It is a time when they must sort through feelings about racial and sexual identity, and develop the coping skills that will serve them the rest of their lives.

I do not mean to say that early adolescence is merely a "transitional period" and that therefore it is best ignored because "they will grow out of it." I think it's a copout to say to young people that what they are experiencing is transitory and thus not of the intense importance they see it as being. Kids don't feel transitional. They feel very here and now, and it is in the here-and-now that we must address their needs.

Denouncing the Myths

I wish I had known how obstructive and destructive are the myths about early adolescence. Among these are that all adolescents are alike; that they are children; that they are, by nature, "pathological"—i.e., crazy, off the wall, irresponsible, governed by forces within them over which we and they can have no control. Such stereotypic thinking not only does great harm to young adolescents who are just at the point in their lives when they are seeking definition, it also seriously undermines the day-to-day functioning of our schools, whose purpose should be to help young people formulate that definition.

As any teacher of junior high can tell you, there is no more wildly variable group than young adolescents. Just look, for example, at the biological differences between a slowly developing boy and a quickly developing girl. Add to those biological differences the differences in social, emotional, intellectual and academic growth, and you can see how utterly fallacious is the notion that all adolescents are alike.

Equally pervasive and erroneous is the view that adolescents are children. Studies have indicated that, since about 1909, when the first junior high school opened, the trend has been for the onset of puberty to occur, on the average, four months earlier each decade. This trend has likely ended, but even assuming it lasted just five decades, from 1910 to 1960, say, it means that today's adolescents are nearly two years more advanced biologically than the young adolescents for whom the junior high school was originally established. There may, therefore, be a serious lack of compatibility between schooling for young adolescents and the young people who attend our schools.

There are other statistics about this age group that should convince us that we consider these young people children very much at their risk and our risk. For example, a school safety study sponsored by the National Institute of Education tells us that violence in schools peaks during the junior high years. The average age of initiation to alcohol is somewhere around age 14. Studies of distress indicate that just as 80 percent of adults manage quite well to cope with day-to-day life and change, so do 80 percent of adolescents. The fact that 20 percent do not is certainly cause for concern, but it is no reason to treat all adolescents as "normally pathological" and to overreact by clamping down with inappropriate controls.

What is needed is to see each adolescent as an individual whose growth patterns—biological, social, emotional and intellectual—are as variable as adolescents themselves, and to respond accordingly. That means taking care *not* to assume that a boy of 12 who is tall for his age is therefore emotionally mature, and thus place inappropriate demands on him for adult behavior. Similarly, to assume that a slowly developing girl is a child emotionally and socially may prevent her from taking greater responsibility for her life.

In more practical terms, I wish I had known that my students' high level of energy was normal and not perverse. Anyone who has ever walked into a seventh or eighth grade classroom and looked at the students knows that they are the most squiggly, squirmy group of kids you've ever seen. Why is it that we know that four-year-olds can't sit up straight and stay seated for 45 minutes at a time, but we don't know that adolescents can't? Just at the time of most rapid growth and change in their development, we make them sit, probably because we are afraid of their physical energies and are trying to control them. Let me say that my problems with discipline in junior high declined precipitously

(continued)

when I allowed my students to get up and move around, and stopped attempting the impossible: the containment of their physical energies.

I wish I had known that friends are the lifeline of adolescents. We do everything we can in schools to separate friends, instead of seeing the peer group as potentially positive and working with it. I discovered just how generous these friendships can be the day I sat among my students, working on a writing assignment I had given. As the students gradually forgot I was there, they began engaging in some of the most generous give-and-take I have ever heard. Some of it was about the lesson at hand; some related to concerns that were crucial to them as human beings.

I wish I had known how to distinguish between distressing and distressed behavior. Distressing behavior drives me up the wall, but it is normal. Distressed behavior calls for intervention, sometimes professional. I remember one of my first parent-teacher conferences in junior high. I was eager to meet the parents of one particularly unruly student with whom I had been totally unsuccessful in communicating. I was sure his parents could shed some light on the problem. On the day of the conference, the boy's mother came rushing into my room, saying anxiously, "Tell me what to do with my son." Only then did we recognize the seriousness of the boy's behavior and begin to seek outside assistance.

Finally, I wish I had known more about myself. It can be very trying to be a teacher of adolescents, especially young adolescents. They are so many different ages at once. They have so many conflicts to resolve. We all have unresolved conflicts stemming from our own adolescent years, conflicts having to do with independence, commitments, sexuality. These adolescents often act out on a panoramic screen what we would rather not acknowledge in ourselves.

Adolescence can be a fragile time in the life span. We all feel vulnerable with these young people. We forget that during this time of rapid growth and change, they are also vulnerable to us. They are hungry for experiences, ideas, facts and relationships. They are hungry for models. I was a model. I wish I had known how important I was. ■

Joan Scheff Lipsitz is director of the Center for Early Adolescence at the University of North Carolina, Chapel Hill.

Idea Place

Middle and upper grade teachers should not overlook the many easy-to-adapt activities described in the Early Grades section of Idea Place.

Language Arts

MAGIC LEARNING CENTER

Set up an independent learning center that works like magic to improve students' reading comprehension. The only materials you need are books of magic tricks and a few decks of cards.

Choose about ten books at varying levels of difficulty and place them, along with the card decks, on a table. Students are to select a card trick and learn how to do it—which requires that they read the directions carefully

and understand them well. Evaluation is built in: if they comprehend what they read, the trick works; otherwise it doesn't.

Provide time for volunteers to perform their tricks for the class. Let the class try to guess how the trick is done.

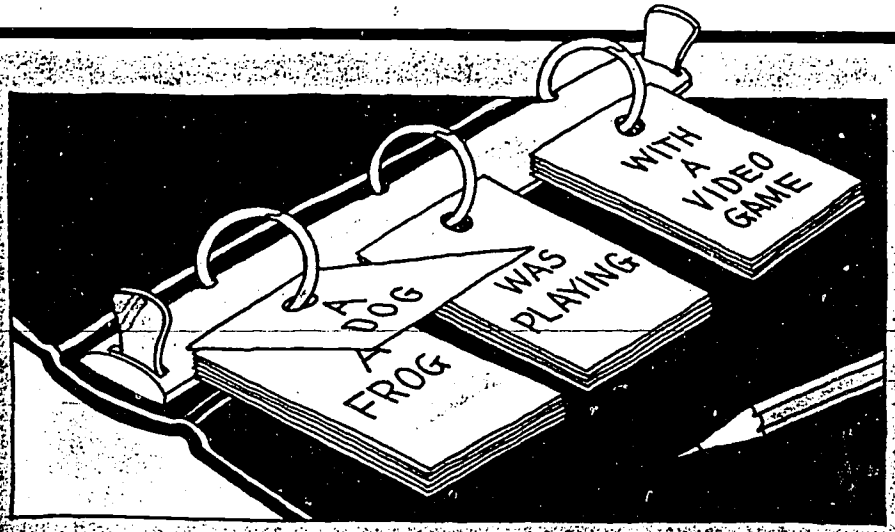
Idea by: Candace Clark, Evansville, Ind.

PICTURING SENTENCE PARTS

Subject, verb, prepositional phrase—the roles of the different parts of a sentence become clearer through this flip-chart-book activity, which combines both reading and drawing.

To make the book, collect these materials: a three-ring binder; 30 index cards; a black marking pen; a hole punch; clear adhesive paper.

Divide the cards into three stacks. On each card in the first stack, write a noun or noun phrase (*a dog, the skinny clown, the broom*). On the cards in the second group, write verbs or verb phrases (*swims, was running, fell*). And on the cards in the third group, write prepositional phrases (*in the soup, over the tree, behind the couch*).



Punch a hole in the top of each card and cover the cards with clear adhesive paper (or laminate them) for durability. Insert the three stacks of cards into the three-ring binder.

Students flip the cards to make different combinations of sentence parts and choose one to illustrate. You can change the cards in the book or add to them whenever you want.

Idea by: Joyce Blair, Parkwood Elementary School, Maryland Heights, Mo.

Mathematics

CHECKBOOK NUMBERS

It's a lot easier to write "23" than "twenty-three," but writing out numbers is sometimes necessary—in writing checks, for example. The following activity gives students a chance to practice writing out numbers as they do a little fantasizing.

Using a real one as a model, draw a blank check, adding the name of an imaginary bank. Make copies and pass them out to the class. Invite students to imagine that they have a large sum of money at their disposal and can write out checks for whatever things they want. You might suggest some possibilities: a car, an airplane ticket to a faraway place, a new wardrobe (let students track down actual costs). Caution students to fill out their checks carefully, since incorrectly written numbers will render checks invalid.

Idea by: Elda Autin, Galliano, La.

CROSS-NUMBER PUZZLES

Most math problems call for performing certain arithmetic operations to find an answer. Cross-number puzzles, which are modeled after cross-word puzzles, are unusual in that students are given the answers and must figure out which operations produce them. The puzzles are as challenging to construct as they are to solve. (From *Substitute Ingredients*, Garlic Press.)

Here's an example of a cross-number puzzle. The object is to fill in the blank spaces with the correct arithmetic signs (+, −, ×, ÷).

6		4		3	=	7
8		4		3	=	9
6		4		2	=	4
=		=		=		
8		4		3	=	4

To introduce cross-number puzzles, begin with a simpler version:

4		5		3	=	3

Ask students to decide which of the four arithmetic signs to put in the spaces to produce the answer 3. Through trial and error, they should discover that a plus sign belongs in the first space and a division sign in the second. Pass out other similar puzzles for students to solve.

Art by Allen Say

To construct cross-number puzzles, first make copies of a blank 7-by-7 square grid, with 9 squares colored in, as shown in the example. Then follow these instructions:

Start with the top horizontal row, filling in numbers, signs and the answer.

Next fill in the far left vertical column with numbers, signs and answer.

Complete the next two horizontal rows, then the next two vertical columns. (There should be no signs as yet in either the bottom row or the far right column.)

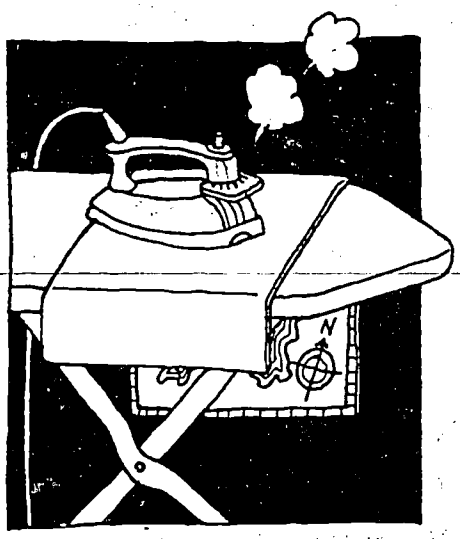
The key to the puzzle is the bottom right square. Find a number that will work by trying different signs in the bottom row and far right column. *Change signs but do not change numbers.*

After you've completed several puzzles and checked all numbers and signs for accuracy, make copies without the signs for students to solve. Later, challenge students to construct cross-number puzzles of their own to exchange with classmates.

Potpourri

PRESERVE MAPS, POSTERS

Keep maps and posters from disintegrating by using this step-by-step procedure to mount them. The materials you'll need include: Stitch Witchery or a similar product (available in fabric stores); preshrunk cotton muslin or sheeting; a steam iron.



To mount a map, follow these steps:

Place the map facedown and cover the back of it completely with Stitch Witchery.

Cut enough muslin to cover the Stitch Witchery completely. Be sure no Stitch Witchery remains exposed.

With the steam iron set on "wool," press the entire back surface of the map, keeping the iron stationary for 15 to 20 seconds in each position. This is necessary to fuse the muslin to the map.

Let the fabric cool, then test adhesion by lifting one edge. If properly fused, the Stitch Witchery will lose its weblike appearance. Press for another 5 to 10 seconds if necessary.

Trim excess material from the edges of the map.

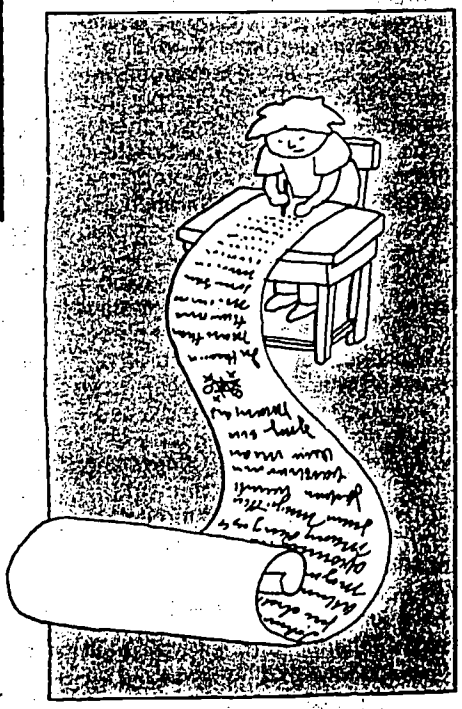
Idea by: James W. Tiller, Sam Houston State University, Huntsville, Tex.

DAILY LOG

Observation and writing skills, the chance to be creative, and a memory aid—these are the things offered by a daily classroom log kept by your students.

At the beginning of each class, assign one student to take notes for the day and, that evening, to revise the notes into finished form. The form is up to the student; the notes might be written as minutes to a meeting, as an essay, poetry, or whatever else appeals.

The following day's class begins with that student's reading of the log, which not only serves to refresh everyone's memory (including the teacher's) of what happened the day before, but also provides a sense of continuity and a jumping-off point for the current day's activities. Students who were absent the day before can find out what they missed, and those who were present enjoy recalling amusing incidents. Best of all, the student who takes the notes and writes up the log gets practice in observing, note taking and writing—and the opportunity to experiment with different writing forms.



Keep the log in a binder or a box where students can have access to it.

Idea by: Natalie Harwood, Talawanda High School, Oxford, Ohio.

SHARPEN YOUR WITS

You can turn your pencil sharpener into a learning experience by posting interesting facts and unusual bits of information just above the sharpener, where students will see them daily. Include newspaper and magazine clippings, provocative quotations, uncommon words and their definitions, cartoons—anything and everything that will entertain and enlighten. Change the clippings weekly and provide time to discuss entries. Invite students to submit items too.

Idea by: Susan J. Kreibich, Winona Public Schools, Winona, Minn.

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Ask With a Picture; Answer With a Story

BY SOPHIA GRANDHOLM

Some time ago I inherited a class of reluctant writers. These students had had years of grammar, spelling and vocabulary drill and should have been well equipped to write; yet most had no confidence in their writing abilities. They had never written with a stirred imagination, never put their own feelings on paper, never tried to shape a piece of writing out of their personal experience. The problem, I decided, was lack of inspiration. But where to find the magic motivator to get them writing?

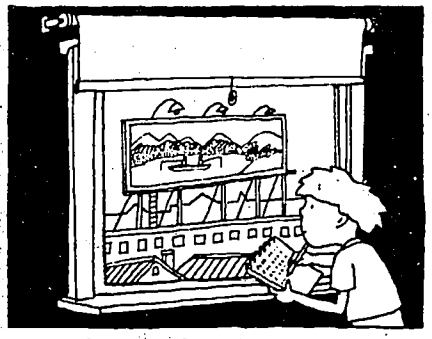
One evening while I was having dinner with friends at a local restaurant, my eye fell on the paper placemats on the table. They pictured a woodland scene, with a dense grove of pine trees to the right and a cascade to the left. In the center, where the water was calm, was a red canoe with a basket and one oar inside.

Questions meandered through my mind. Where was this place—northern Minnesota? the Colorado Rockies? Norway? Who were the people who belonged with the canoe—lovers? fishermen? runaways? All at once I realized that here was my answer to the class writing problem. Begging several dozen mats from the management (who refused my offer of payment), I rushed home to revise the next day's lesson plan.

Back in class, I handed out the mats. I asked the students the same questions that had gone through my mind the previous evening. The answers varied greatly, and all of them showed original thinking. One student thought the canoe belonged to fur traders who had been run off by natives. Others imagined lovers, escaped criminals or Boy Scouts hidden in woods.

After we had explored numerous possibilities, and I was sure each person had some ideas in mind, I asked the class to write a short story explaining the scene. The students set to work eagerly, in a hurry to get all of their ideas down on paper before they forgot them. The bell's ring brought groans and complaints about how fast the period had passed. Because few students had finished their stories, I suggested the class complete them at home.

The following day, 24 stories were piled on my desk even before class had begun. Everyone seemed proud and excited. We decided that I should read the stories aloud, omitting the



authors' names. I read almost nonstop for the entire period. I did not ask for criticism or comment. If this experiment were successful and we began writing in earnest, I reasoned, there would be time later to learn to analyze and evaluate the work.

I could scarcely believe my eyes as I read. The average story was three to five pages long, and some stories were considerably longer. (This industriousness from students who formerly fussed over writing a few paragraphs!) Without being specifically instructed to do so, most students had developed the elements of a short story—plot, theme, character and setting.

Sources of Story Starters

Full-page magazine illustrations—with detailed backgrounds and no words—provide an endless supply of story starters. If there are people in the picture, it is essential that they be doing something. Above all, each picture has to pose something of a mystery to viewers; it has to rouse their curiosity about what is happening, or has happened, or will happen. A picture of a house on fire, or a table set for three, or a car moving at high speed—these are the kinds of scenes needed to inspire a story.

Outdated calendars—especially those containing pictures of seascapes or landscapes—are another good source of story starters. So are travel folders. *Travel and Leisure*, *The New Yorker* and other magazines often have coupons for such folders, which can be yours for an investment in postage.

Foreign tourist offices in the U.S. will often provide huge brilliant posters of their countries for the asking. Displayed before a class of 25 to 30 students, one poster can generate 25 to 30 different stories. The importance of using large, detailed, evocative pictures cannot be overstressed. By the same token, postcards, snapshots and cutouts smaller than 8½-by-11 inches are just not effective; they simply do not have enough detail.

One word of caution: the most important lesson I learned in using pictures to stimulate writing is that the questioning process is a vital part of the writing. Don't be tempted to skimp on it or to skip it altogether. Some teachers may want to construct a formula for the question-asking phase of the writing activity; the journalistic who-what-when-where-why technique can work well to uncover the elements of a story. Others may prefer just to brainstorm. However it is handled, questioning is a vital part of the writing process. Be sure that students have at least a mental list of questions, if not a physical one, to be answered in their stories.

Since I discovered the story-starter-picture approach, I have had little trouble getting students to write. Success in writing assignments has brought about improvement in all areas of language arts skills. I particularly like this method because it is adaptable to all ages and ability levels, can be varied to suit differing objectives, and can be as structured or as open-ended as a teacher may desire. ■

Sophia Grandholm is a high school English and social studies teacher.

Art by Allen Say